TEACHERS COLLEGE RECORD

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LITERATURE

GRADE VI

No subject in the curriculum of the Horace Mann Elementary School receives more attention, from the first grade through the seventh, than that variously called "reading" and "literature." This seems right and natural to both pupils and teacher. The children regard reading as the open sesame, not only to the stories in which they delight, but also to a great variety of useful information. The teacher sees in it something more than this: in her eyes it is her strongest ally in carrying on the work of education. By its aid she hopes to lay the foundation of that true culture which the study of literature pre-eminently gives—the broadening of the mind, the development of the sympathies, the establishment of high ideals.

If the influence of literature is so potent, it is obviously our duty to give our children, as early as possible, the means to acquaint themselves with good books, and to place in their hands the right good books at the right time. If this latter is done, they will quickly grow to a truer appreciation of what is really fine, and will develop an ever-increasing love for it. Which books are the "right" ones for our sixth grade children is one of our problems. How we attempt to solve this problem—the principles that guide us in our selection of material, and the ways and means that we employ to carry out these principles—is the subject of this paper.

The reading books of a few years ago offered for the delectation of children of this age among other things such selections as Milton's "Invocation to Light" and Addison's essay "On

Immortality." No fault can be found with these as literature, but in the fuller knowledge of to-day they are hardly regarded as the best means of inspiring the twelve-year-old child with the "joye of books." Instead we introduce him to the old border ballads and to the epics and romances of the middle ages—The Arthurian legends and the tales of Charlemagne. These appeal to his interest, follow naturally upon the myths and fables of his earlier years, and pave the way for the tale that the child of this age craves—the true story of action and heroism.

The same general principles guide us both in the poetry and in the prose selections. In the former it is especially important that a wise choice be made, for the children have reached a stage where they are inclined to discountenance verse and there is danger that they will grow up with the distaste for poetry that is only too general. If poetry is, as Matthew Arnold says, "simply the most beautiful, impressive, and widely effective mode of saying things," it is well worth while to cultivate a love for it. This may be accomplished not alone by the choice of the poems to be studied but by the method of study as well. A recent writer[1] says that the dislike for poetry is due to our treatment of it—"we try to extract instruction from what was meant to give us joy." If then our choice be a wise one, and if we read the selected poem for its beauty, its music, its sentiment, it will not only consciously give us pleasure but it will unconsciously quicken the imagination as nothing else can do.

Besides the principles of selection outlined above, that of relating the work in literature to the other work of the grade enters as one of the determining factors. In fact, much of the literature of this year is suggested by the course of study in history which begins with the decline and downfall of the Roman Empire and the migration of the German tribes, and follows with a study of mediæval Europe, including the period of exploration which resulted in American colonization. This is historically a period full of idealism and of heroic achievement, and as such has been the inspiration of many a work of literature. Thus an opportunity is given to correlate the reading with other subjects naturally, without sacrificing the higher interests of literary study. Of course historical novels and poems are not regarded

[1] Samuel Crothers in *The Gentle Reader.*

as history, but are studied from a purely literary point of view.

During the early part of the school year several of Macaulay's "Lays of Ancient Rome" are read. In stirring verse such as that of "Horatius" no so-called "devices" need be resorted to on the part of the teacher—every child will thrill at the picture of the "dauntless three" keeping the bridge against the hordes of invaders: every child will hold his breath when the hero plunges "headlong in the tide." There are innumerable methods of approach in taking up a poem of this kind. One is as follows: The work in history has already recalled the situation of Rome and the enemies that threatened it during the later years of the Empire. The children are now ready to compare this condition with the earlier one described in "Horatius." A few words on the part of the teacher, perhaps a rapid sketch on the board, will put the setting clearly before the class. The poem naturally divides itself into parts. The teacher may read the first part aloud—the picture of the great Etruscan army marshalling under its proud leader—and after the reading discuss its incidents with the children. They may then take the book home and read the second part to themselves and discuss it with the teacher the following day. When the poem has been read through it is often briefly outlined with the class as follows:

Scene I—The Etruscans.
How they assembled their forces.
" II—The Romans.
How they prepared for defence.
" III—The Combat.
" IV—The Escape of Horatius.

Then the different scenes are compared and re-read. The group of stanzas that "draws the clearest picture," "the most exciting stanza" "the most beautiful one," are in turn selected and read until the whole poem is familiar by frequent repetition. The children are then asked to commit to memory two or three of their favorite stanzas. The easy rhythm, the meter, and familiarity with the piece make this a surprisingly simple task, and by the time the various favorites have been recited, the children know much of the poem by heart. Thereafter throughout the year a frequent request is "Let us see how much of 'Horatius' we can recite!" and it is rehearsed with never-flagging

enthusiasm. Here is a lesson in patriotism that does not need to have its moral pointed by the teacher. The children are in perfect accord with the sentiment—

> "And how can man die better
> Than in facing fearful odds,
> For the ashes of his fathers,
> And the temples of his gods."

They have now reached a period in history that is particularly rich in legendary lore; and while the time possible to devote to its literature in school is too limited to give more than a glimpse of its charms, this glimpse is so full of promise that many of the children are inspired to continue this line of reading at home. Two or three of the legends of King Arthur, and the story of Roland are usually selected for this work. Here again the chivalrous sentiments of the knights, their loyalty, and their courage impress themselves unconsciously upon the impressionable reader. Sometimes the teacher reads one of these stories to the class, sometimes one of the children, having prepared himself beforehand, reads to the rest, and again the story is read at sight in the classroom and talked over then and there. As these tales are read for the interest of the incidents and for simple character study, rather than for the subtler points of structure and style, no special preparation is needed, except in cases such as that referred to above, when a child reads in order to give pleasure to his classmates.

Children of this age will read stories of adventure, good ones if they are brought into contact with them, indifferent or poor ones if the good are not at hand. This is the opportunity for the introduction of Sir Walter Scott's romances. If the child once falls under the spell of this master, he will no longer be content with the tales of boyish bravado and mock heroics with which the market is flooded. Some teachers feel that *Ivanhoe* is difficult reading for sixth grade pupils. It is true that the paragraphs are long, the sentences often involved, and the vocabulary replete with unfamiliar words, but these are after all minor details. The characters are so real, so human, the pictures so vivid, the scenes so dramatic, that all difficulties of technique are forgotten in the fascination of the story. We

apply the adage, "There are millions of truths that men are not concerned to know," freely to our needs and do not stop to analyze references to "the children of Ammon" or "the dragon of Wantley." Neither do we devote ourselves assiduously to the dictionary to find the exact meaning of such words as heptarchy, pursuivants, or phlebotomy. We regard these as "honorable points of ignorance," and in spite of them laugh at Wamba's jests, applaud Gurth's loyalty, yield to the fascination of the Black Knight's mysterious personality, wax indignant at the persecution of Isaac, glory in Rebecca's fortitude. In fact we live and have our being for the time with these characters that are as real to us as our daily companions—and through all we are insensibly led to see the beauty of honor, and truth, and courage, whether they exist in the lowliest serf or in the king on his throne.

As the style of the author is less simple than that to which the children have been accustomed, it may be well for the teacher to read the opening chapters aloud, the children finding on their maps the historical setting of the story; or the teacher may describe the scene in her own words and tell enough of the early incidents of the tale to make the children eager to go on with it. Of course, in as long a selection as *Ivanhoe*, much of the reading is done at home and merely discussed in class. To test the home reading the children are frequently asked to illustrate by a drawing certain descriptive paragraphs, or to compare orally some phase of life of the mediæval period with that of our own, as a Saxon castle with a home of the present day. Sometimes the teacher spends the first ten minutes of the literature lesson in questioning rapidly as to the events that were recorded in the home reading, sometimes the children come prepared to ask one another questions on this work, and frequently a single child is called upon to give a clear but brief summary.

The majority of the children invariably read ahead and finish the book long before the allotted time, but this does not dampen their ardor in the least for any especially fine scenes that may be read in class or for the discussion of the details of the story. A favorite bit of character study consists in finding the various incidents that bear testimony to the fact that Wamba was more wise than foolish, that Isaac loved his daughter better

than gold, or that Cedric was ready to sacrifice his own interests to those of the Saxon race. Another exercise that is valuable as a general summary and that affords an opportunity for selection and arrangement of material, consists in giving orally or in writing a history of the individual characters of the book. Sometimes each member of the class takes a different character and follows his fortunes from the time he appears in the story until his career is ended.

Ivanhoe readily lends itself to dramatization, and the children love nothing better than to commit certain scenes to memory or to reproduce them in their own words, borrowing many a phrase from their author. Rebecca may mount a desk instead of a turret, but this does not make her sentiments less lofty nor her language less impassioned as she prepares to hurl herself to death—if need be. Occasionally a class selects a scene here, and another there, and weaves them together into a play. Then a little simple costuming is allowed and perhaps another class invited to see the performance.

With some classes the reading of *Ivanhoe* is followed by that of *The Talisman*. Frequently this is only well begun in school and finished at home. One result may be definitely counted upon from this work. A large number of each year's class will read one or more of Scott's other tales at home before the year is finished and many will have contracted a love for the author that will prove a pure delight for years to come. In connection with *Ivanhoe* some of the Robin Hood ballads are read, and Howard Pyle's *The Merry Adventures of Robin Hood* is kept on the reading table where it is accessible whenever a leisure moment presents itself.

Later in the year when the interest of the class shifts from the old world to the new, through their study of history, Longfellow's *The Courtship of Miles Standish* is read and Irving's *Rip Van Winkle* and *The Legend of Sleepy Hollow*. The first is in line with the controlling thought of the year. In this a picture of indomitable courage, of perseverance, of high ideals is again presented to the children, but stripped of the glamour of knightly trappings. Their study of the Pilgrim settlement gives the geographical setting necessary to appreciate the poem, the historian gives the facts, and the poet's art makes these facts intimate personal experiences, so that the children are deeply

impressed with the sufferings and hardships of that first Puritan winter, and with the patient endurance with which these trials were met. The method of study in this case is similar to that of "Horatius." The various scenes are read and discussed, favorite passages selected, and the characteristics of the principal personages passed upon with approval or disapproval.

It is especially fitting that the New York boy and girl should become familiar with Irving's works. As the "father of American literature," as a New Yorker himself, as a chronicler of their own ancestors and of their own surroundings, he has a special claim upon the interest of the children. When one adds to this Irving's ready humor, his quick sympathy, his suggestive fancy, it is no wonder that he becomes a favorite. Rip Van Winkle's pathetic career and Ichabod Crane's grotesque figure move the children to tears and to laughter. The fun is obvious and they enjoy it heartily. The underlying lessons are merely hinted at, but children are quick to take a suggestion, and there is nothing lost by the author's reticence. The children are so familiar with the region of which Irving writes that they compare his descriptions with their own impressions and appreciate the art that clothes familiar scenes with the charm of romance. Most of this reading is done at sight in class as these stories are essentially tales to be enjoyed together. In fact there is little occasion for question or for discussion—the author needs no interpreter. The children realize Rip's weakness but invariably decide that his "neighborliness," his kindness to his dog, his sympathy with the children of the village, go far to atone for his faults. In fact they regard him with the pity that is akin to love. *The Legend of Sleepy Hollow* is a close second in their hearts, and Ichabod Crane, with all his absurdities, is a source of unmitigated delight from the moment he appears until his mysterious disappearance.

Besides the literature outlined above many short poems are read. These may be suggested by the season, by some anniversary, or they may be of interest for some other reason. The method of study depends, of course, upon the character of the selection. It is safe to say, however, that the first presentation is a complete reading in order that the children may have the poem before them as a whole. They are encouraged to tell why they like it, and to select the lines that appeal to them as

being particularly effective, musical, strong, or beautiful. It is then read again and often re-read until the class enters heartily into the spirit. If the selection is worth while, this repetition is a pleasure rather than a matter of indifference. The children often testify that they did not care much for a poem the first time they read it, that they liked it better the second time, and that they "love it now."

The work thus far described deals with the reading to which a definite literature hour is assigned on our programs. There are in our school life, however, other opportunities for acquainting our children with good English. The most important of these is afforded by the daily opening exercises of the school, at which portions of the Bible are regularly read aloud. We frequently hear the charge made that the rising generation interpret a reference to Greek mythology far more intelligently than one to Biblical history, that they are more familiar with the Iliad of Homer than with the Psalms of David, in short that they are wofully ignorant of the greatest English classic. The pupils of the Horace Mann School should not find it necessary to plead guilty to this charge, for they hear the old Bible stories, the psalms, the proverbs, the parables, and other portions of the Old and New Testament read and re-read with a repetition that cannot fail to insure familiarity. Once a week these opening exercises are held in the individual classrooms where some little study of the Bible, though from a purely literary standpoint, is possible.

Another exercise to which the class devotes fifteen or twenty minutes each week takes the form of an entertainment which a group of the children plan and carry out for the pleasure of the others. This may consist of several recitations, of the reading of two or three good stories, or of the dramatization of some selection in which the class has become interested. This exercise has a two-fold object: it is designed both to furnish an additional opportunity for developing literary appreciation and judgment, and to train the children to feel that their ability to read and recite should be used for the pleasure of others as well as of themselves.

Throughout the course, memorizing is made a feature of the work in literature. Several of the finest psalms and from six to ten poems are committed to memory by the class each year.

The list varies from time to time, but general favorites are the 19th, 23d, 24th and 103d Psalms, Scott's "My Native Land," Burns's "My Heart 's in the Highlands," Motherwell's "The Cavalier's Song," Tennyson's "Charge of the Light Brigade," and Barry Cornwall's "The Sea." This learning of a poem follows its reading and discussion. Occasionally it is made a class exercise, teacher and children working at it together, sometimes in concert, sometimes silently, with only occasional consultation to compare progress and method. Again the learning is done at home and simply the results given the following day in school. As this work is carried throughout the grades, the children should have a fairly good stock of standard English verse at their command by the time they complete their elementary course.

To summarize briefly, we are so fully convinced that literature is a dominating force in the development of mind and character, that we neglect no opportunity to surround our boys and girls with its influence. We attempt to cultivate a love and an appreciation of what is fine by placing in the hands of the children selections that have value in themselves and have an added value in that they are of a nature to appeal to their interests. If by such means we succeed in giving our children a taste for good reading and a growing discrimination as to what is good, we are providing them with a resource within themselves that will go far to insure a happy future, and at the same time are furnishing them with the ideals that will tend to make them of use to their fellow-men.

M. F. K.

LANGUAGE

Grade VI

The children of the Horace Mann School come to us with the ability to use their mother tongue fairly well. The majority of them are born and bred in the atmosphere of good English, the home thus aiding the school in fostering its use. The teacher is consequently spared many of the problems that face those whose pupils come to them with an inheritance of illiteracy. The grosser errors of speech are so infrequent that comparatively little time need be devoted to them, with the result that the school finds opportunity to train the children in the nicer distinctions of language that are the indication of true culture, to help them to express themselves with greater precision, ease, and grace, and to give them a working command of the technicalities necessary to clear written expression.

By the time the children reach the sixth grade much has been done along all of these lines. They have been encouraged from the first grade up to talk freely on subjects that interest them, their vocabularies have been enlarged by their reading and memorizing as well as by their contact with new companions and a new environment, they have learned to write legibly and with a reasonable degree of speed, and they have mastered the rudiments of spelling, of capitalization, and of punctuation. From this enumeration it might seem as though little were left for the upper grades to do, but it is just in these grades, when the formal side of the work no longer proves too great a stumbling-block, when the use of an unnatural medium of expression becomes fairly natural and more or less instinctive, that composition can be said even approximately to fulfil its mission—"the training of the mind through the acquisition and expression of ideas."

The daily recitation, whether it be in history, geography, or in some other study of the curriculum, offers frequent opportunity for training in oral expression. The method of the recitation —involving as it does, the discussion of topics under consideration, the relation of personal experiences, and the description

of incidents and events connected with the subject of the lesson—results not only in active thinking on the part of the children, but in a natural, spontaneous style of expression as well.

Since oral language thus forms so prominent a feature of the school work, the English period proper is largely devoted to written composition and to such exercises in language and grammar as tend to clear written expression. Certain definite principles guide us in our composition work, and adherence to these principles has gone far to remove the ban from this comparatively slow and laborious method of conveying ideas. In the first place we ask the child to write, not upon vague, general themes, but upon definite, interesting topics about which he has something to say; we ask for short written exercises in order that the mechanical labor involved may not seem a herculean task; we require written work so frequently that it becomes a customary and natural thing to write thoughts instead of speaking them; and finally, we furnish an incentive for the work in the class reading and criticism which is a feature of every composition exercise.

Again we have recourse to the studies of the grade for themes. From history we select such topics as, "Life in a Mediæval Castle," "How a Squire became a Knight," "Henry the Navigator;" from geography, "My Trip up the Nile," "Across the Sahara by Caravan;" from nature-study, "How to Make a Barometer," "Snow Crystals;" from literature, character sketches such as "Wamba, the Jester," and "Rebecca" suggested by the reading of *Ivanhoe*. At other times when the children are deep in mediæval lore, they try their hands at writing a thirteenth century romance. The bare suggestion of a story is sometimes given them, as

SCENE—

A gloomy castle in a great forest.

CHARACTERS—

A knight in armor.

An imprisoned princess.

It is interesting to notice that in this work, the hero is usually "clad," not "dressed," in full armor, that he rides a prancing "charger" or "palfrey," instead of a "horse," and that he rescues a "damsel" rather than a mere "girl." These are encouraging signs that the children are beginning unconsciously to adapt their style to their theme.

The advantage of selecting composition subjects from school studies is obvious. By this means the children are furnished with topics in which they are already interested, upon which they have clear ideas, and the main features of which they have heard emphasized. This preparation tends to produce spontaneous expression and a style that is clear and to the point. We do not, however, confine ourselves to writing upon themes drawn from the other studies of the year, but plan frequent exercises that call the individuality of the child more fully into play, such as writing letters, accounts of personal experiences, and descriptions of things seen. Among themes of this kind that have been found valuable are, "An Amusing Incident of my Vacation," "An Exciting Experience," "An Outgrown Belief," "How I Learned to Skate," "How to Play Volley Ball," as well as letters to friends, to business houses, and occasionally to imaginary acquaintances.

In regard to the method employed in teaching composition, few definite rules can be laid down. More often than not a simple outline is arranged by the pupils with the help of the teacher. Occasionally each child makes his own outline without assistance, and not infrequently the writing is done without the guidance of formal headings. The preparation for written composition also varies with the subject. Sometimes careful oral work precedes it, while at other times the only preliminary consists in the planning that each child is expected to do before he begins to write. Sometimes, after the children have the general outline of their compositions well in mind, they set to work to devise as attractive an opening paragraph as possible, and each child reads his attempt aloud. All the beginnings that appeal to the class as being particularly good, that give promise of something interesting to follow, are retained by their authors; the others are cheerfully re-written, the desire to reach the standard set by the class proving a sufficient incentive. At other times the introductory paragraph of some good author is read and the children imitate it closely in their own work. In fact, good models are used frequently to emphasize or illustrate the point under consideration. For instance, if the class compositions reveal, through the frequent repetition of words or phrases, a vocabulary inadequate to the needs of the subject, not only are synonyms for the troublesome words called for, lists written

on the blackboard, and substitutions made, but an author that deals with the subject under discussion is consulted when feasible, and his method of avoiding repetition is noted. In this connection the children have copied from Tennyson's "The Brook" all the words that the poet uses to describe the *flowing* of the brook.

When the compositions are completed the best are selected either by the teacher or by a committee of the children and read aloud, or every child reads his own paper. The plan followed in the correction varies with the particular end the teacher has in view. When she is working primarily for an interesting style, she may practically ignore features that are most emphasized when sentence structure is the leading thought. In the latter case the teacher must be the main critic, in the former the burden of the criticism may be thrown upon the children themselves, who listen with flattering attention to an interesting story but grow restless when called upon to hear one that is "dry." Occasionally a set of papers receives no further individual attention than the criticism which follows the oral reading. As a result of this a child sometimes rewrites his paper or perhaps quite as often he acts upon the suggestions offered in his next piece of written work. When compositions are not corrected individually as to form, the common mistakes, such as misspelled words, awkward repetitions, incorrect punctuation, careless writing, or poor arrangement of work are made the subjects of special class exercises. In other instances each paper is carefully corrected by the teacher and re-written by the pupil.

Spelling. The subject of spelling receives its full share of attention in the sixth grade, though no text-book is used. Words are selected from other studies of the curriculum and from magazine and newspaper articles, and sentences, paragraphs, and stanzas of poetry are frequently dictated. It is far more difficult to unlearn an incorrect form than to learn a correct one. Everything possible is done to avoid the misspelling of words in all forms of written work. With this end in view, written lessons in geography, history, or in other subjects of the grade are preceded by drills in spelling which include such words as are likely to be needed in the written work. The dictionary also is resorted to whenever a child feels himself in doubt.

As correct spelling is dependent upon correct mental images,

many exercises are given to train the children to form such images. As an essential step in the process we first direct attention to the accurate observation of words. Accordingly the children make lists of the words on a page that contain silent letters, of all those that have the same suffix, the same prefix, of those with the "ie" combination, or that double the final consonant—in fact, anything is resorted to that has the effect of concentrating the mind upon the form of words. The lesson, whether it consists of words or sentences, is sometimes dictated immediately after such study, while again the work is taken home and given further attention in preparation for the next day's recitation.

Grammar. The tendency of modern English teaching to postpone the study of grammar to the higher grades meets with hearty sympathy in the Horace Mann School. In fact, though the systematic study of grammar begins in the sixth grade, its treatment is such that the subject can hardly be regarded as the formal, abstract science that we are accustomed to associate with that name.

The following topics are considered during the year:—

1. Analysis of simple sentence into subject and predicate.
2. Parts of speech—noun, pronoun, verb, adjective, article, adverb.

The children have been writing sentences for years; it is but a step further to think and speak of the sentences as made up of two parts, the subject and the predicate. The essential word or words of each part are next selected as the simple subject and the simple predicate. Each part of speech is carefully developed and made clear by numerous examples beginning with the simplest forms, but as training in thought is the most important function of grammar we do not hesitate to emphasize, at a very early stage of the work, that the part of speech to which a word belongs depends not upon the word itself but upon its use in the sentence. Consequently by the middle of the year the children should be able to appreciate the fact that the same word may be at different times a noun, a verb, and an adjective, and to characterize it in clearly defined cases like the following:—

1. He heard the *chiming* of the bells.
2. The bells *are chiming* merrily.
3. The *chiming* bells make sweet music.

Thus while we train our children to reason as to the function of words, we expect them to recognize only the simpler constructions, leaving for the seventh grade such difficult forms as relative, demonstrative, and interrogative pronouns, and the more complicated phrasal verbs.

Throughout the year the work in grammar is closely associated with the literature and composition, often proving an aid in the interpretation of the former and in the correction of the latter.

If, as has been said, the ability to speak and to write good English is the highest test of mental cultivation, we cannot hope to graduate our children in the art at the end of the elementary course. Every step that they take, however, carries them nearer to this goal and gives them greater power over themselves and over others.

M. F. K.

HISTORY

Grade VI

The subjects of study for the sixth year are mediæval history and the period of discovery, exploration, and colonization in America.

Before entering the sixth grade the child has studied ancient history. Here he has learned to look upon history as a succession of world empires. The study of the mediæval epoch brings before him a new set of ideas for such words as *king*, *government*, *army*, *general*, *learning*, and *culture* have lost their old meaning. Since we are teaching history to sixth grade pupils we are ever careful that our work is not beyond their comprehension; therefore, only the distinctive features of this period with their causes and tendencies can be dealt with profitably.

A study of the middle ages is peculiarly suited to the biographical form of treatment, and we become interested in Alaric, Theodoric, Attila, Clovis, Alfred, Charlemagne, Richard the Lion-hearted, Joan of Arc, and others. The work begins with a review of Roman history to show the power and extent of the Empire at its age of greatest splendor; this is followed by a study of the conditions which make possible the great barbarian invasions. The various migrations are then treated in detail and the general characteristics of the German tribes are brought out and compared with those of the Romans and the Greeks. Contrasts are made especially in regard to homes, personal traits, methods of warfare, and forms of government. With most of the invaders we spend only enough time to note the causes of their failure to establish for themselves any lasting power on Roman soil. The Franks, who finally dominated the other Germanic nations, are studied more fully. The growth of a German Empire, the "Holy Roman Empire of the German Nation," is followed until its purposes, extent, and nature are made known, and its relation to the old Roman Empire and the Empire in the East is understood.

The great features of this period, viz., the Christian church, feudalism, and the crusades are considered, though in a very elementary way, because some knowledge of their development and results is necessary to form a conception of life in mediæval times. In the organized Roman church with its far-reaching influence over the lives and ideas of all the European peoples we find a successor of the Roman Empire. As the great common possession, guiding and controlling the life of the individual and the state, it receives especial attention.

Feudalism is shown to be the outcome of the conditions following the long-continued period of the invasions. It is taken up as a period of confusion out of which grows a new way of doing things and a new method of getting along in the world. A plan of development along the following lines is found helpful:

(1) We note the destruction of the old forms of government and the existence of no central power; (2) we picture the growth of self-reliance by showing how a few men with interests in common finally make a stand against the invading enemy; (3) we depict the inevitable rise of a leader and the necessity for the building of those fortresses called castles; (4) we bring out the fact that this leader develops into a military lord and establishes a new form of government; (5) we follow the progress of the feudal government and observe its development into an organized system; (6) we consider the duties and obligations imposed upon the various participants in this system. Feudal society is studied by lessons on the life of the castle, village, and monastery; and later we regard the rise of a middle class by lessons on the growth of cities and trades. In chivalry we find an idealized state of thought and action due to the devotion to higher and better things as well as to an awakening to the responsibilities of feudal power.

The first crusades are studied as a natural outcome of the zeal inspired by the teachings of the church and the power possessed by the papacy; in the latter crusades the love of arms and the influences of chivalry are brought out. In connection with the crusades we trace the growth of Mohammedanism and make plain the chief characteristics of Mohammedan life and teaching. The results of the crusades make the foundation upon which we build to get the change of ideas and habits of life that lead to the Renaissance. In particular, the freeing

of the mind, the changes in methods of warfare, the growth of trade, and the improved methods of navigation are emphasized.

By giving the child the above general view of the history of the middle ages we aim to help him to a better understanding of American history. The necessity of finding new trade routes to the East leads us to this study. We now begin a particular account of the discovery of new worlds, both in the East and in the West, and the conquests and settlements made in the Americas.

If we are to understand the work of discovery and exploration we must keep constantly in mind the ideas of geography as shown by the old maps actually in use at that time. Emphasis is placed upon the right of any nation to claim and hold new territory. Comparisons are made between the colonies established by the Spanish, French, and English, and definite ideas are given of the extent of territory claimed by each of these nations. When the more detailed study of the English colonies is begun we briefly review the conditions in England in the early part of the seventeenth century. The Virginia, New York, and Plymouth colonies are studied at some length and used as types of the southern, middle, and New England groups respectively. The settlement in Virginia is followed in detail to secure a clear idea of the life and institutions of the people and to bring out the chief characteristics which marked this as a typical southern colony. Maryland, the Carolinas, and Georgia are then taken up sufficiently to show their location, history, importance, and relation to the other colonies. In a similar way we look upon colonial life in New York and Massachusetts and make comparisons with Virginia. We select only a few topics for study, but these are investigated with enough detail to leave a definite impression on the pupils. The course ends with a general summary which brings out the points of difference between the various colonies.

The work is carried out in the order indicated by the following outline:

HISTORY OUTLINE

Roman History.

I. Early history of Rome.

1. Brief review showing (a) the beginning of the city,

(b) the kings of Rome, (c) the Roman Republic, (d) the Roman Empire.

2. Manner of acquiring territory.
3. Treatment of subjects—Romanization.
4. Peoples conquered by the Romans.

II. The Empire about 400 A.D.

1. Extent—"Frontier."
2. Government.
   (a) Central. (b) Provincial. (c) Division of the Empire.
3. Internal conditions.
   (a) Social. (b) Industrial. (c) Political. (d) Religious.
4. External conditions.
   (a) Foreign menace. (b) Equipment for defence.

The Ancient Germans.

I. Who they were.

II. What they were.

1. Individually.
2. In character.
3. Politically.
4. Socially.

III. Attitude toward civilization

IV. Relations with the Romans.

V. Location of tribes about 400 A.D.

The Barbarians and the Roman Empire.

I. Invasion of the West Goths.

1. Causes.
2. Entrance into the Empire.
   (a) Conditions on which they were allowed to come.
   (b) Where they crossed.
   (c) Treatment they received from the Roman soldiers.
   (d) Results.
3. Events of their wanderings.
   (a) Rise of Alaric.
   (b) Battle of Adrianople.

(c) Invasion of Greece.
(d) Invasion of Italy.
(e) Sack of Rome.
(f) Death of Alaric.
(g) Policy of new leader.

4. Where they settled.

II. Invasion of the Vandals.

1. Causes.
2. Description of wanderings.
3. Where they settled.
4. Results to themselves and the Empire.

III. Invasion of the Burgundians.

1. How they started.
2. Where they crossed.
3. Where they settled.
4. Their legends.

IV. Invasion of Angles and Saxons.

1. Condition of Britain.
   (a) Under Roman rule.
   (b) After Roman evacuation.
2. Character of invaders.
3. Causes of invasion.
4. The Heptarchy.
5. Work of King Alfred.

V. Invasion of the Huns.

1. Origin and character of the Huns.
2. The kingdom of Attila.
3. Description of raids.
4. Their defeat.
5. Results of the death of Attila.

VI. Invasion of the East Goths.

1. Condition of the East Goths before the death of Attila.
2. Causes that led to the invasion.
3. Where they settled.
4. Work of Theodoric.

VII. Invasion of the Lombards.
1. Whence they came.
2. Where they settled.

VIII. Summary.
1. Effects of the various invasions upon Europe.
2. Relations of the Germans and the Romans.
3. Failure of early German kingdoms.

Life and Institutions of the Middle Ages.

I. The Christian Church.
1. Christianity and the Roman Empire.
(a) Treatment of early Christians.
(b) Reasons for adopting Christianity.
2. Church growth.
(a) Government of the Church.
(b) Work of missionaries.
(c) Ways in which Christianity was adopted.
3. The Church in the Middle Ages.
(a) What it did for the people.
(b) Its relation to the state.
(c) Its intellectual supremacy.
4. Cathedrals.

II. The Franks.
1. Their invasion.
(a) Entrance into the Empire.
(b) Settlement in Gaul.
(c) Treatment by Roman Empire.
(d) Reasons for their strength.
2. Their kingdom.
(a) Condition of Franks when Clovis became king.
(b) Consolidation of tribes.
(c) Expansion.
(d) Extent of kingdom on death of Clovis.
(e) Successor of Clovis.

III. Charlemagne.
1. As a man.
2. His kingdom.

(a) Extent of kingdom and condition of Franks when Charlemagne became king.
(b) Conquests made.
(c) Efforts at culture.

3. His empire.
(a) Extent.
(b) Charlemagne's relation to the Pope.
(c) The coronation.
(d) The new government.
(e) Why the power of the Franks was permanent.

IV. The Northmen.
1. Their homes and occupations before the raids.
2. The raids.
(a) On coast cities and towns.
(b) On Paris.
(c) On Italy.
3. Their conquests.
(a) In the two Sicilies.
(b) In Normandy.
(c) In England.

V. Feudalism and Chivalry.
1. Feudalism.
(a) What it was.
(b) How it began.
(c) Reasons for its growth.
(d) The importance of land in this system.
(e) Ceremonies.
(f) Feudal rights and obligations.
2. Chivalry.
(a) Origin and relation to feudalism.
(b) Ideals.
(c) Ceremonies.
(d) What it accomplished.
(e) Causes of its decline.

VI. Mohammedanism.
1. Origin.
(a) Religious belief of Arabs.
(b) Mohammed and his teachings.

2. Cause of rapid growth of the new religion.
3. Invasion of Mohammedans.
   (a) Condition of southern Europe at this time.
   (b) Conquests made and extent of territory claimed.
   (c) Result of action taken by the Franks.

VII. Crusades.
1. Introduction.
   (a) What they were.
   (b) When they took place.
   (c) What people were engaged in them.
   (d) What inspired them.
2. The First Crusade.
   (a) Motives for starting.
   (b) What people took part.
   (c) How the companies were organized.
   (d) Line of march.
   (e) What was accomplished.
3. Government of the Holy Land.
4. The Third Crusade.
   (a) What people took part.
   (b) Route followed by each army.
   (c) Relations of the leaders.
   (d) Results.
   (e) King Richard.
5. The Children's Crusade.
   (a) Origin.
   (b) Organization of the two bands.
   (c) Line of march of German children.
   (d) Line of march of French children.
   (e) How it ended.
6. Reasons why the crusades failed.
7. Results of the crusades.

VIII. Papacy and the Empire.
1. Relation of Papacy to Europe.
2. Relation of Empire to Europe.
3. Struggle of the popes and the emperors.
4. Condition of the Church as a result of these struggles.
5. The Protestant revolt.

IX. Life of the Castle.
1. The castle.
(a) Where it was built.
(b) By whom it was built.
(c) What it was like.
2. The lord of the castle.
(a) His duties.
(b) How he spent his time when at home.
3. Other inmates of the castle.
(a) What their duties were.
(b) How they amused themselves.

X. Life of the Monastery.
1. Reasons for establishing monasteries.
2. What a monastery was like.
3 Government of a monastery.
4. Life and work of the monks.

XI. Life of the village.
1. The peasant.
(a) His condition and his home.
(b) His occupations and his pleasures.
(c) His duty to his lord and to the Church.
2. Manner in which land was apportioned.

XII. Life of the town.
1. Mediæval cities.
(a) What the German barbarians and the Romans thought of cities.
(b) How and where they grew.
(c) How they gained independence.
2. Growth of a middle class.
(a) Their homes.
(b) Their occupations.
(c) Their guilds.
3. Growth of trade.
(a) Position of Italian cities with regard to the revival of trade.
(b) How trade was carried on with Europe.
(c) How trade was carried on with the East.

XIII. Some of the things which brought the middle ages to an end.

1. The Crusades.
2. The Hundred-Years War.
3. The revival of learning.
4. Introduction of gunpowder.
5. Improved methods of navigation through the use of (a) the compass, (b) the cross-staff, (c) the astrolabe.
6. Impulse given to commerce by the crusades.

American History.

I. The new trade routes.

1. How Europe came to wish a new trade route to India.
   (a) The things in the East Europe wanted.
   (b) What the old routes were.
   (c) Why the old routes could no longer be used.
2. How the new routes were discovered.
   (a) The plan and discoveries of the Portuguese.
   (b) The plan and discoveries of the Spanish.
   (c) The plan and discoveries of the English.

II. Work of the discoverers and explorers in the New World.

1. The claims which these discoveries gave to each nation and what each nation had to do to make them good.
2. How the Spanish tried to explore and make good their claim.
   (a) The parts they explored.
   (b) The nature of an exploration and its difficulties.
   (c) The knowledge and claims resulting from Magellan's voyage.
   (d) The attempt at colonization.
   (e) The wealth and power resulting to Spain.
3. How the French explored and made claims in America.
4. How the English explored and made claims in America.
5. Relation between the French, English, and Spanish.

III. Characteristics of the country and natives about 1600.

1. What things of to-day we would have to forget to have an idea of what the country was like then.

2. What the Indian was like personally.
3. How he made his living and spent his time.
4. What territory was held by the Algonquins and Iroquois.
5. How the Indians helped and hindered the white men.

IV. The growth of the colonies in America.
1. Some ideas of the times about colonies and new countries.
   (a) What a country must do to keep its claim.
   (b) The right of the Pope to distribute the new land.
   (c) The necessity of getting written rights from some one.
   (d) The relation of the colony to the mother country.
2. The two great companies.
   (a) The object of these companies.
   (b) What the various people concerned expected to get out of this scheme.
   (c) The territory granted to each company.
   (d) How the colony was to be governed.
3. The Virginia colony.
   (a) The kind of settlers selected and why they were willing to go.
   (b) The journey.
   (c) Place chosen for the settlement.
   (d) What the colonists did at first contrasted with what they should have done.
   (e) How Smith helped the colony.
   (f) The beginning and growth of individual property.
   (g) The tobacco industry and its effect.
   (h) The beginning of self-government—the Assembly.
   (i) Encouragement of family life.
   (j) The beginning of slavery.
   (k) The founding of a college.
   (l) Summary to show the growth of the colony and its condition to about 1700.
4. The other southern colonies.
5. The Plymouth colony.
   (a) The Pilgrims and their plans.
   (b) The voyage to the New World.

(c) The first winter in Plymouth.
(d) The dealings with the Indians.
(e) Growth of the Plymouth colony

6. The Massachusetts Bay colony.
(a) The settlement made by the Puritans.
(b) How they were governed.
(c) The Puritan church.
(d) Growth of the Puritan settlements.
(e) Kinds of business carried on.
(f) Founding of Harvard College.
(g) Social condition.

7. The other New England colonies.

8. The New York colony.
(a) The settlement made by the Dutch.
(b) The beginning of New York.
(c) Condition of the colony under Dutch rule.
(d) Condition of the colony under English rule.
(e) Rivalry of the two "parties."
(f) Lord Bellomont and the pirates.

9. The other middle colonies.

10. General review of conditions studied.

At the beginning of the year's work the pupils start a chronological table which grows with the course. This is found most helpful to a proper conception of the progression of time. The list here given is the one accepted and memorized by the class.

378 A.D.	Battle of Adrianople.
410	Sack of Rome by West Goths.
451	Defeat of Huns.
455	Sack of Rome by Vandals.
800	Charlemagne crowned emperor.
1095–1270	Period of Crusades.
1492	Discovery of America by Columbus.
1609	Hudson discovers Hudson River.
1620	Founding of Plymouth colony.

We cannot dissociate history from a study of geography if we expect to attain satisfactory results; therefore the use of maps is essential. We make an excellent wall map at a small cost by purchasing a piece of black-painted canvas and tracing with white paint a simple outline of Europe and enough of Asia and Africa to establish the boundaries of the Mediterranean

Sea. Any particular routes, positions, or boundaries under discussion can be readily marked upon it with crayon. We find this map invaluable in showing the extent of the Roman Empire; in pointing out the Roman frontier and the location of the barbarian tribes before the invasion; in tracing the wanderings of the invaders; in reconstructing the Western Empire after the invasions; in marking the routes taken by the armies of the crusaders; in showing the nations of Europe after the crusades, and in locating the rival cities of Italy and their trade routes to the East. When the period of discovery, exploration, and colonization is studied another wall outline-map of the world is needed. Paper outline-maps that can be placed in the hands of the children are also found very useful.

The text-books purchased by the pupils are Harding's *Story of the Middle Ages* and Fiske's *A History of the United States*. We by no means confine ourselves to these books; the school library and home library are constantly consulted, for the child is encouraged to go to various sources for his information, and where it is possible we read selections from the original sources of information. The great emperor seems less like a "history man" after reading Einhard's *Life of Charlemagne*, for here was one who knew him intimately. Marco Polo's story of his wonderful travels and experiences is eagerly pored over in connection with the lessons on the development of trade with the East; in the "Narratives of De Soto," one's heart aches at the sufferings endured by the early explorers, and when reading the account of the Jamestown settlement in the "Works of John Smith" we are brought face to face with the hardships of those days. After such lessons, historic persons seem real and the child soon thinks and speaks of historic things as the results of human action.

In connection with the development of trade through improved methods of navigation, we are particularly fortunate in being able to show the pupils several old astrolabes made in the fifteenth century which belong to the collection of Professor David Eugene Smith of Teachers College. It certainly adds interest to our work to be able to tell the child that so far as its date is concerned one of these astrolabes might have been used by Columbus himself.

The life and institutions of the Middle Ages furnish plenty

of fascinating material that appeals to children. When studying the ancient Germans we take up the fairy tale as an expression of their childlike mind and superstitions. The Burgundians after settling in the valley of the Rhone gave the story of Siegfried a permanent form. Then besides these there are the chivalrous tales of "King Arthur and His Court," the "Story of Roland," Charlemagne's favorite knight; and the "Merry Adventures of Robin Hood." With the study of the crusades we tell of the origin of the "Arabian Nights" while the "Story of the Forty Thieves" is discussed and compared with the tales of chivalry of western Europe.

In reference work we have the pupils use books which give the facts in greater detail than do their own texts, and wherever it is possible we give them books which they may read through. It is seldom we have to stimulate in our pupils a desire to read or to investigate some given topic—on the contrary they are very eager to read anything which bears on the work; our problem is rather one of directing their energy to reading that which is best and that which will prove of real service in establishing correct impressions.

S. H. U.

GEOGRAPHY

Grade VI

Geography, though the oldest of the sciences, is called in the phraseology of the schools of to-day the "new geography." It is "new" not because discoveries have recently been made that revolutionize the old science, nor because the conception of what constitutes geography has undergone a radical change, but simply and solely because the school has only of late begun to form an adequate notion of the aim and scope of the subject. It is the "new geography" in that it now deals with relationships rather than with isolated facts, with principles rather than with scattered details. This modern view of the function of geography raises it from a study that supposedly "disciplines the memory" to one that exercises the power to reason; and with this higher conception of its purpose comes an added responsibility in regard to the selection of subject matter and the method of its presentation.

Different circumstances suggest different ways of meeting this responsibility. The scheme evolved by the Horace Mann School has been outlined in previous numbers of the *Teachers College Record;* but a brief résumé is necessary here in order to make clear the relation which the particular work of the sixth grade bears to the course as a whole. The subject is apportioned as follows:

3rd Grade—Home Geography and World as a Whole.
4th " North America
5th " Europe and Asia.
6th " Elements of Physical Geography.
Africa—South America—Australia.
7th " North America. Special study of the United States ending with a summary of the world's commerce and industry.

Though continent work is a feature of the course throughout four years, the point of view of the two later years is very different from that of the two earlier. In the lower grades attention is

centered upon the industrial life of the people as influenced by their physical environment, in the higher grades upon this physical environment as the basis of commercial and social development. In the first study the children accept existing physical conditions, for the most part, and explain their influence upon life. In the more advanced study not only are the physical conditions carefully considered but the reasons for these conditions are investigated, their effect upon life in general observed, certain definite laws deduced, and these laws applied in the study of new regions.

For example, in the fifth-year study of Europe the children are told that the Mediterranean countries have heavy rainfall in winter and a dry season in summer. No explanation of this condition is attempted here, but the condition itself is considered as a factor governing the vegetation of the region and the occupations of the people. In the sixth year a careful study is made of the circulation of the air over the globe and of the characteristics of the various wind-belts, including their migration with the heat equator. Thereafter in the continent work, when a region such as the Mediterranean basin is under consideration, no arbitrary statement as to its rainfall is necessary. The section is located in regard to wind-belts and the previous study of the character of the winds makes it possible for the children to deduce the fact that this region, being subject to the trades in summer and to the westerlies in winter, experiences wet and dry seasons. The children, with the help of the teacher, thus evolve their own basis for inference as to the life conditions of the section. In other words, they are prepared in the higher grades to appreciate causes which in the lower grades are ignored.

The object of this work is not alone to furnish the children with a body of useful and interesting facts but to give them as well an understanding of some of the great laws of nature, to train them to observe closely along certain lines and to make use of their observations, and to accustom them to associate causes with their consequences and consequences with their causes.

To give these desired results most fully geography cannot be taught by the old text-book method, that is, the method by which the child memorizes a lesson assigned in the book and

recites it in class. In fact, the text assumes a minor role in geography teaching in the Horace Mann School, being regarded not as a guide to be followed blindly wherever and however it may lead, but as an authority, rather, to be turned to for convenient summaries and for the verification of conclusions. These conclusions may be the result of observation, of experiment, or of the study of maps, globes, pictures, charts, and pieces of simple apparatus. Studied in this way, geography gives training in close reasoning in an important field, develops an inquiring attitude of mind, and stimulates the imagination, thus taking its place as a real educational force.

The physical geography topics which constitute the first part of the work of the sixth grade are presented according to the following outline:

I. The Earth as a Globe.
  1. Form—Evidences of curvature, proofs of rotundity, importance of shape.
  2. Size—Circumference, diameter, effect upon life.
  3. Motions.
    (a) Rotation.
      Evidences and direction, axis, poles, equator.
      Results—Day and night, points of the compass, local noon.
      Latitude—How measured, length of a degree, meridians, use.
    (b) Revolution.
      Results—Distribution of light, varying length of day and night; zones and boundaries.

II. The Atmosphere.
  1. Its relation to the earth, man's relation to it.
  2. Temperature.
      Thermometer.
      Distribution over land and water.
      Influence of ocean currents.
      Heat belts, isothermal lines, heat equator.
  3. Winds—Effect of temperature on circulation of air.
      Wind-belts (trades, doldrums, westerlies, horse

latitudes, polar winds) migration of the wind-belts, effect upon ocean waters.

4. Rainfall—Evaporation, condensation, fog, dew, frost, snow. Rain, distribution over earth, dependence upon temperature, winds, surface, etc.

III. Plant and Animal Life.

1. Dependence of plant life upon soil, temperature, and rainfall.
2. Vegetation regions located—forests, grasslands, deserts, tundras.
3. Dependence of animal life upon vegetation.
4. General distribution of animals.

IV. People.

The various races, their characteristics as influenced by environment, their distribution.

These physical geography topics are frequently introduced and supplemented by the nature-study of this grade, which is physical in character and thus often serves to elucidate the principles involved in the geography course. Again they are developed orally by means of discussion and simple experimentation. For instance, instead of reading from the text-book and memorizing the fact that the sun reaches its greatest height above the horizon exactly at noon, the children erect a vertical rod on a board and mark the shadow which it casts at frequent regular intervals for an hour before and an hour after noon. When they find that the shortest shadow is cast at exactly twelve o'clock, the position of the sun at that hour is not an item in the text-book that may or may not be forgotten, but it is a part of the knowledge of every child in the class.

Such a subject as the distribution of light during the northern summer is developed by a series of questions like the following: (The class has previously studied the distribution of light at the time of the equinoxes).

1. Upon what part of the earth do the vertical rays of the sun fall at the time of the equinoxes?
2. What part of the earth is in light at that time? In darkness?
3. Where does the line of division fall?

4. Look at the season apparatus (or diagram). Where do the vertical rays of the sun fall on the 21st of June?
5. How far north have they moved since March 21st?
6. What part of the earth is in light at this time? In darkness?
7. Where does the line of division now fall?
8. Which hemisphere receives most light at this time?
9. What is the condition in regard to light at the north pole? At the south pole? At the Arctic Circle? At the Antarctic Circle? At the equator? In our latitude? In similar latitudes south of the equator?
10. How long will the northern hemisphere receive more light than the southern?
11. How long will the north pole be in light? The south pole in darkness?
12. What people live farthest north? Describe their life during the long period of daylight. Would you like to live in this part of the world? Give your reasons.
13. How long is the day at the Arctic Circle? How long is the night at the Antarctic Circle?
14. What do you think determines the position of the Tropic of Cancer? Of the Tropic of Capricorn? Of the Arctic Circle? The Antarctic?
15. Compare the position of the circle of light on June 21st with its position on March 21st.
16. Compare the length of day and night over the world on these two days.
17. Why do we not always have equal days and nights?
18. Where do you think the vertical rays of the sun fall on the 21st of December?
19. Describe the distribution of light over the earth at this time.

At the close of a lesson or series of lessons of this kind the children are possibly asked to take their text-books home and compare the conclusions they have reached with the author's account. On the following day they are held responsible for all points that were developed in class as well as for any additional facts that the text-book furnishes, and they are required to give

evidence of their knowledge of the subject by means of oral or written recitations.

The topics in physical geography are followed by continent study, the principles deduced being applied to Africa, South America, and Australia. Africa is outlined below in some detail as representative of our general plan of continent work, and Egypt as an example of our study of individual countries.

Africa

1. Location—In regard to hemispheres, heat-belts, wind-belts, other continents, oceans, latitude, longitude.
2. Size—In comparison with other continents.
3. Coast-line—Extent, regularity, advantages and disadvantages, comparison with other continents.
4. Surface—Highlands, lowlands, their distribution, their characteristics, comparison with other continents.
5. Drainage.
   - Rivers—Nile, Congo, Niger, Senegal, Zambezi, Limpopo, Orange—their general direction, characteristics, value from standpoint of commerce and exploration.
   - Lakes—Chad—Location and relation to drainage. Lakes of Central Africa—reasons for size, importance.
6. Climate.
   - Temperature—Application of work on temperature of atmosphere to this continent, conclusions tested by reference to isothermal map.
   - Winds—Application of work on wind-belts to the winds of this continent.
   - Rainfall—General condition arrived at from knowledge of temperature, winds, surface. Specific condition from study of rainfall map. Regions of extremely light and heavy rainfall accounted for.

   (Effect of climate upon exploration and development)
7. Vegetation—General distribution as dependent upon temperature, soil, and rainfall. Character.
8. Animals—Distribution as dependent upon vegetation. Character.

9. People—Distribution as influenced by climate, vegetation, etc. Races, characteristics.

Egypt

Preliminary to the study of the topics outlined below, the interest of the class is enlisted in regard to the country. Some of the children may have friends who have been in that part of the world, some may have traveled there themselves, and in either case they are ready to give interesting accounts of the people, their customs and manners. Others have read of the ancient Egyptians and are eager to tell something of their civilization. The story of Joseph, from the Bible, is sometimes read to the class before beginning the study of Egypt in order to impress the fact that this country was the home of a great people thousands of years before Christ. Photographs are also shown illustrating the life of the people, the character of the country, etc. When interest has thus been aroused, Egypt is studied with the definite aim in view to discover the physical conditions that are responsible for the life of the region.

1. Location—Position in Africa, relation to Sahara, bordering seas, approximate latitude and longitude, direction and approximate distance from New York.
2. Surface—Highlands, lowlands, distribution and character.
3. Drainage—The Nile, its redemption of Egypt. Overflow—cause, time, effect, resulting ancient civilization which developed in Nile delta and present conditions.
4. Climate.
   - Temperature—Approximate, from location. Specific, isothermal map.
   - Winds—Summer and winter—application of study of general wind-belts.
   - Rainfall—Approximate from knowledge of winds, specific from rainfall map.
5. Occupations.
   - Agriculture—Proportion of fertile and desert land. Irrigation, method, extent. Products, time of planting and of harvest. Tropical fruits.
   - Grazing—Animals raised, importance of occupation, reasons for prevalence.

Commerce—Products exported, imported, countries with which trade is carried on. Means of communication—Nile, Mediterranean, Red Sea, railways, Suez Canal (length, width, extent to which used, advantages) caravans (character, size, routes, merchandise).

6. Towns.

Cairo—Advantages of position, character, importance.
Alexandria—Character and extent of trade, ports with which it communicates.
Port Said, Suez } Reasons for development.
Khartum—Advantage of location.

7. People—Descendants of the ancient Egyptians, Arabs of the towns, Bedouins—their mode of life, religions, languages, relations to Turkey, to British Empire.

In the work on the continents as a whole, the consideration of topics is rather general in character, the object being to get the larger features in mind, a bird's-eye view as it were. In the study of the individual countries, on the other hand, far more detail is given in order that the children may regard life conditions that differ from their own with the appreciation that comes with fuller knowledge. The study of both continents and countries is essentially map study, the work being based upon wall maps for the larger features and upon the maps found in Longman's New School Atlas for the more specific. With good surface, rainfall, isothermal, vegetation, commercial, and political maps before the class almost every fact of importance can be discovered by the pupils. By this treatment the close sequence of cause and effect is borne in upon the child as he himself develops one from the other. For example, the physical map of Africa is all that is necessary to give the children the needful information in regard to the location and the larger surface features of Egypt. In the consideration of such a topic as the drainage of the country, the class again resorts to the map and finds that the whole length of Egypt is watered by the Nile. In the effort to understand the influence of this river upon the country, the children begin a study of its characteristics. They find that it empties into the Mediterranean through many

mouths; they measure it roughly and see that, for a space greater than the distance from Maine to Florida, it receives no tributaries. The question then arises, "How can so great a river exist in the heart of this practically rainless region?" In search of an answer, the course of the Nile is traced toward its source and the discovery is made that it is fed by two great streams from the Abyssinian Highlands. The class now examines this region and finds that when the heat-equator shifts north these mountains are in the doldrum belt—the belt of heavy rainfall. The children readily see that these swollen mountain torrents feed the main stream with so great a volume of water that an overflow of its banks is the result. They then figure out the time of the inundation and speculate as to its effect upon the soil of the flooded region. The isothermal map, previous study of the wind-belts together with a map of the winds, and the rainfall map furnish all necessary data for an understanding of the climatic conditions of Egypt, and from the climate it is a logical step to the products and the resultant occupations of the people.

The principal cities, Cairo, Alexandria, Khartum, Port Said, and Suez are not simply located, but their situation and development are considered as the outgrowth of definite, natural causes. A study of the population map is next made. Nothing could afford a more striking illustration of the effect of physical conditions upon life than does this map—the great desert stretches with their scanty population and the narrow, fertile Nile valley with its teeming millions.

The map work is made vital at every point by reference to the human interests that are involved. When the rainless condition of the country is under discussion, photographs of the flat-roofed houses that are characteristic of the region are shown, as well as pictures illustrating its scanty vegetation; when the temperature is noted, the dress of the people is commented upon; when irrigation is considered, the Egyptian method is compared with the method in vogue in our own desert region; when the soil of the inundated plain is the topic, the primitive plow of Egypt is compared with that with which we are familiar.

Map study is also supplemented by reference work designed to further impress upon the minds of the children the ancient and modern civilization to which the annual inundation of the Nile has given rise. Definite topics are suggested for home

reading in Carpenter's "Africa," Tarr and McMurry's Geography, Dodge's Geography, and in the encyclopedia. These books are all available in the class-room and the various references are assigned to different pupils and reported upon to the class either orally or by means of written papers. Throughout the work, photographs and lantern slides serve to make more realistic the various topics under consideration, while outline maps help to fix the location of mountains, rivers, and towns.

The work as outlined for Africa is typical of the study of the other continents considered in the sixth grade—South America and Australia. That suggested for Egypt is illustrative of the study of individual countries in a general way though the amount of detail varies with the relative importance of the country.

If the results of the work in geography even approximate the aims of the course, the children should pass from the sixth grade with a few well-defined ideas that will have a direct bearing upon their future study of the subject as well as upon their attitude to the phenomena of the world about them. They should understand some of the more elementary geographical principles and should be able to make a few simple applications of these principles. They should have made progress in their power to think independently, and should have taken the initial steps in scientific training through their opportunities to observe, to compare, to generalize, to verify, and to apply their conclusions. They should have learned to read maps more accurately and should have formed some conception of the influence of geographical conditions upon human development. Above all, this study should have given the children some realization of man's dependence upon man and should have fostered a more intelligent and sympathetic regard for life in whatever phase it may exist.

M. F. K.

PHYSICAL NATURE-STUDY

Grade VI

For years professors of physical sciences have stood by and seen their colleagues in the field of biological science offer tempting courses in nature-study to the children of the primary and grammar grades, but as time went on they set about asking themselves, "Why should not simple problems in physics and chemistry be quite as useful and alluring to boys and girls as nature-study?" The question is often asked them, "What is your excuse for introducing this subject in the grades?" "No excuse is needed," is the reply. "But, with what does it correlate?" "With the every-day life and interests of children."

Because physical nature-study may set before a child some problems that interest him can scarcely be called a sufficient reason for launching this subject, rather than some other that happens to be attractive, upon a curriculum already crowded. There must be a better reason for our preference and this is found in the fact that here we have a great mass of valuable and useful knowledge concerning things constantly surrounding the child. We have been guided in our selection of subject matter by an aim to make this course helpful to a better understanding of other phases of work in which the child is engaged.

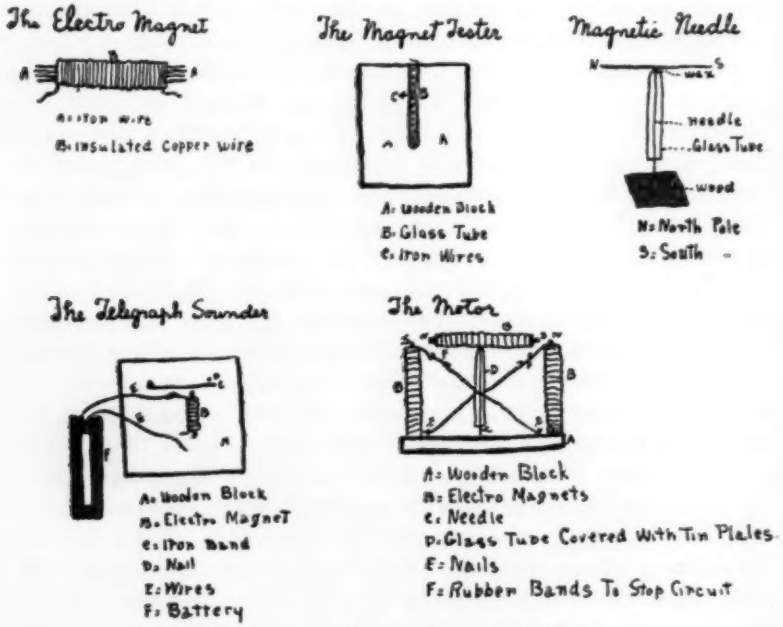
In the Horace Mann Elementary School physical nature-study is taught in the sixth grade where two half-hour periods a week are devoted to it. During the greater part of the year it is closely related to the geography of the grade and constantly explains many facts related to the every-day life of the child. The course is largely a study of the atmosphere, its physical properties and usefulness to mankind.

By the time a child leaves the fifth grade his interest in nature-study has become pretty thoroughly aroused. He is unconsciously on the alert for some new fact about trees, flowers, birds, animals, or insects. This lively interest is now turned into a new channel,—new, yet dealing with such familiar things as changes of temperature, winds, rain, snow, and dew; but a

constant inquiry into the causes of these phenomena and the relations between them, and an acquaintance with the physical processes of nature are new. As no text-book is used, the child's experiences and observations are largely drawn upon. Information is freely given when the pupil cannot readily obtain it in any other way, and whenever it is of especial advantage to arrive at an immediate and simple explanation. He is urged to ask good straightforward questions when his own reasoning powers fail to give a satisfactory solution.

Each new problem is made as definite as possible by means of practical experiments, or where these are impossible, by simple illustrations. These experiments can be satisfactorily carried on in the class-room by the teacher; but when a laboratory is available where each child is provided with the necessary apparatus the lessons become of most value. The experiments are not ends in themselves; they are used only when they point out some principle, or explain some daily experiences in the child's life. For example, when the compressibility of air is taken up, we first deal with it from the standpoint of the child's experiences. On coming to school in the morning this principle, in one way or another, has added to the comfort and safety of the trip. If the bicycle was used compressed air filled the tires; if the journey was made either by electric car or train, compressed air operated the brakes; on entering the school building it again helped through the aid of the door check attached to the heavy entrance door, and if a game of football or basket-ball was played during the day compressed air was invaluable. With examples of this kind, we now find ourselves ready to study the geographical side, and begin our work with a consideration of atmospheric pressure at and above sea-level, and here find helpful the experiences of those pupils who have been in the high mountains. This introduction is followed up during the geography recitation by the wind systems of the world, and it is here that we make application of the principles already brought together. A vital point in the work is to see that the child actually understands the relation between these principles and the wind systems. It is a mistake to assume that the child, once having gained the principles mentioned above, will see without guidance their application to things about him. A few lessons on light and sound are given, and found very helpful.

During the last weeks of the school year, when the work on the atmosphere has been finished, a few simple principles of electricity are taken up. These lessons do not correlate with any other subject taught in the grade, but are given in order to explain in a popular way the principles underlying the electrical devices and toys by which we are surrounded. Electro-magnets, magnets, push-buttons, motors, bells, telegraph sounders, and the telephone are examined and simple explanations given which are vitally interesting to the pupils, as many of them have electrical contrivances more or less useful rigged up at home. The pupils make their own wet batteries with which to perform experiments.



Apparatus made by sixth-grade Boys.

Last year some of the boys formed a class which met after school one hour each week to do extra laboratory work. Each boy made for himself an electro-magnet, a magnet tester, a magnetic needle, a telegraph sounder, and an electric motor. These pieces of apparatus were very simple and in general well made, and the boys got a great deal of satisfaction out of them;

even those pieces which were crude and poorly constructed had their good effects for they taught the makers that careless work was sure to result in a useless machine.

Since no text-book is used it becomes necessary for the sake of reference to keep some sort of record of the lessons; therefore, each pupil provides himself with a good sized blank book in which he writes compositions explaining the chief points brought out in the class-period, or makes careful drawings of the apparatus used. This writing is done either during a composition period or at home. Besides being an aid to the memory this written work aims to develop in each child the ability to make clear, concise statements, and to keep strictly to the point under discussion.

The course for the year may be outlined as follows:

PHYSICAL NATURE-STUDY OUTLINE

Atmosphere

I. Air is a real substance and occupies space.
Prove by experiments.

II. The shell of air.
(1) Position with regard to the earth.
It envelops and rotates with the earth.
Earth composed of rock-mass, water, and air more or less intermixed.
(2) Position with regard to us.
We live on the surface of the earth, but at the bottom of the sea of air.
(3) Extent.
Heights to which atmosphere extends proved by ascension of highest mountain peaks; movement of clouds; highest balloon ascension; action of meteors.
(4) Properties.
Tasteless, odorless, colorless, transparent. Can be felt when in motion.
(5) Uses.
a. To sustain our lives; to sustain lives of plants and animals; to transport seeds,

pollen, etc.; to support birds in flight; to drive sailing ships and wind mills; to carry vapor; to raise waves.

b. To effect land forms; shift sand dunes; cause weathering and erosion of rock surfaces.

III. Air is compressible and elastic.

(1) Prove by experiment.

(2) Mechanical uses.

Air guns, rifles, bicycle tires, footballs, door checks, siphon bottles, air brakes.

(3) Lists made of uses of compressed air.

(May be assigned for home work.)

(4) Application of principle.

Differences in density of atmosphere at and above sea-level. Explain decrease of pressure in going up a mountain, increase in going down.

IV. Air has weight and exerts pressure.

(1) Prove by experiments.

(2) Mechanical uses.

a. The pump; simple, force, Springle's.

b. Barometer. Make simple mercury barometer. Examine aneroid barometer and barograph.

(3) Arithmetical problems involving weight of air and atmospheric pressure.

(May be assigned for home work.)

(4) Application of principles—

a. To explain the cause of winds.

b. To explain the relation between the barometer and weather conditions. Take weather observations.

V. Composition of air.

(1) Principal gases.

a. Oxygen.

The element that makes things burn. Experiments.

Relation to man and his activities; light, fire, respiration.

b. Nitrogen.
Value in composition of air.
c. Carbonic acid.
Relation to animal and plant life.
(2) Practical application.
Pupils taught that in case of fire, flames can be put out by lowering percentage of oxygen by means of smothering, or by use of chemical fire extinguishers.

HEAT AND ITS RELATION TO ATMOSPHERE

I. Principal sources of heat.
(1) Sun.
a. The source of heat.
b. How heat is transmitted to the earth.
c. How the atmosphere receives its heat. Compare radiation of rough and smooth surfaces such as grass, pavements, water, radiation in desert regions.
(2) Combustion.
a. Heating of buildings. Explain and examine thermostat.
b. Spontaneous combustion—experiments.
(3) Slow chemical action.
a. Experiment—slaking of lime.
b. Decomposition of animal and vegetable substance.
c. Animal heat.

II. Conduction of heat.
(1) Metals, best conductors. Experiments.
(2) Window panes, ice, and snow transparent to heat rays. Experiments.
(3) Atmosphere almost an absolute non-conductor.

III. Temperature of the air.
(1) Effect of sun's energy upon air, water, rock-mass.
(2) Temperature determined by latitude, altitude, land and water areas, winds, ocean currents, clouds, seasons.

(3) Examine thermometers and thermograph.
Study weather maps; compare summer and winter temperature over land and water.

IV. Moisture of the air.
(1) States of matter—gas, liquid, solid.
(2) Evaporation.
a. Experiments showing how evaporation depends upon temperature and surface exposed. Vapor is gaseous state of water.
b. Effect of wind, dry air, damp air, day and night temperatures upon evaporation. Explain what is meant by humidity.
c. Chief sources of evaporation. Oceans, lakes, rivers, etc.
(3) Condensation.
a. How produced.
Boil water; let vapor come in contact with a hot surface, a cold one, note result.
b. Dew—Dew point.
Bring tumbler of very cold water into a warm room; note result. Compare amount of dew after clear night, after cloudy one; upon rough surfaces such as grass and cultivated land, upon smooth surfaces such as pavements and roads; upon mountains, in valleys.
c. Frost.
Bring tin beaker containing ice and salt mixture into warm room; note result.
Work of frost on soils and rock.
d. Mist—Fog.
Formation. Breath on cold day.
Cause of mists over lowlands, swamps, rivers, and lakes on summer evenings.
Cause of fog on sea, on land. Danger to navigation.
e. Clouds.
Formation. Cloud observation to de-

termine effect of winds on direction and velocity.

Common forms of clouds; reasons for color.

f. Rain.

Formation; shape and size of drops.

How rainfall is measured; amount that falls in New York.

Compare amount of rainfall on land with that on sea; compare amount on coast-line with interior.

Effect of mountains on rainfall.

g. Snow.

Formation; shape and size of flakes

Crystallization proved by experiments

Snow as protection to vegetation.

h. Hail.

Formation; shape and size of hailstones

Destroys crops.

As a rule when experiments are mentioned the imagination pictures complicated machines and appliances such as are commonly found in laboratories where physics and chemistry are taught. The experiments mentioned in the outline call for only the simplest kinds of apparatus. When studying conduction of heat two pieces of wire of equal size, one of copper, the other of steel, are held in a flame to determine which conducts heat the quicker; a glass rod is also heated and results compared. To prove that air is a real substance and occupies space the pupil packs a handkerchief into the bottom of a dry tumbler, then inverts the glass and plunges it into a basin of water. That the handkerchief remains dry seems to many of the children a very wonderful fact. Wherever it is possible we use for illustration those simple mechanical appliances in daily use; for instance, an ordinary medicine dropper will serve as well as a more elaborate device to show that air has weight and exerts pressure. From every point of view we aim to make this course of a very practical nature.

S. H. U.

ARITHMETIC

Grade VI

The pupil comes to the sixth grade with a knowledge of the fundamental operations; the tables of linear measure, capacity measure, time measure, and weight measure; simple common fractions; and addition, subtraction, and multiplication of decimal fractions. His greater power of thought and his growing ability in independent thinking permit him to grasp the further development of these subjects more quickly and easily than he has been able to attack any previous new principle. He now has not only a receptive mind but is fast developing an analytic one. He seeks reasons for things received and inquires whether they are for particular or general conditions. As an example of this he is not satisfied to know that to divide fractions you invert the divisor and multiply, but he must have explained *why* you invert and if it is always necessary. Again, he has learned that a proof of multiplication is to cast out the nines from the multiplicand, multiplier, and product, but he is anxious to know "why" and whether it "will always prove." These and many other questions are asked and must be answered in a way simple enough to be understood and yet technical enough to make the steps apparent. These things and the great interest the subject matter produces make the sixth grade work in arithmetic one of the most enjoyable subjects in the whole curriculum.

The principal features of this year's work are decimal fractions and percentage, with the application of percentage to discount, profit and loss, commission, and simple interest.

The work of the previous grades is reviewed in many different ways and with as many new applications of old principles as possible. By introducing variety in this way the necessary drill can be given without making the work monotonous. One example of drill which is given in the early part of the year may be interesting to note. Several columns of figures are put on the board before the recitation begins. Already the class has been divided into two sections. Each pupil takes a small piece

of paper on which he writes just the sum of the separate columns. As soon as he has finished his work he puts his paper on the desk and his name is checked on the list of names in his section. The teacher judges the paper on the points of accuracy and rapidity, and announces to the class, at the next recitation which *section* obtained more points. No individual is mentioned and no one works for himself, but for his section. Review of this kind, involving various principles, is carried through the year. Abstract work of this kind will interest the pupils as long as a sufficient motive is given.

Common Fractions. A knowledge of the simple forms of fractions has been obtained in the lower grades, but the long vacation, together with the tendency of children of this age to remember only superficially, make essential a complete review. The teacher may assume in beginning this review that the pupil's whole knowledge consists in the ability to recognize a fractional expression. Hence we have the class read fractions until they are able to see the value of any ordinary fraction, we have them reduce them to lowest terms and to fractions having a common denominator; they add, subtract, multiply, and divide them.

Before leaving the grade the pupil should be able to use all simple fractions in the four fundamental operations, to reduce any ordinary fraction to its simplest form, and to multiply mixed numbers without reducing them to improper fractions. He should also be able to apply his knowledge of fractions in solving a great variety of concrete problems. The more complex fractions should not be brought into this grade, for whereas the pupil may have occasion to reduce $\frac{\frac{7}{8}}{\frac{3}{4}}$ to its simplest form he is not likely to find practical use for so complicated an expression as $\frac{\frac{2}{3} \text{ of } \frac{6}{7} + \frac{7}{8}}{\frac{3}{5} \text{ of } \frac{5}{8}}$. And yet expressions like the latter may be found in text-books in common use.

Decimal Fractions. As in common fractions, the pupil has obtained some knowledge of the principles of decimals in the fourth and fifth grades and has made some simple applications of these principles. In the fourth grade he learned to use decimals in his problems with the money idea, as "A cook used eight quarts of vinegar to make pickles. At $0.04 a pint how much did the vinegar cost?" In the fifth grade he learned to use

them in a more abstract way, and he learned to add, subtract, and multiply decimal fractions. These must receive a thorough and interesting drill to recall the forgotten details and to secure a basis for percentage.

Division of decimals is the first new principle introduced in the sixth grade. The difficulties of this process are the placing of the decimal point and the understanding of the value of the decimal place. The former can be understood only after long drill, the latter by some concrete lesson. A child can see that .8 and $\frac{8}{10}$ sound the same and have the same value; he knows that .875 or $\frac{875}{1000}$ reduced to its lowest terms equals $\frac{7}{8}$, but it is most difficult for him to see that 7 divided by 8 equals .875. The decimal point is not a factor in the child's reasoning. He will ask "How can one, by dividing, get a number larger than the dividend itself?" and it will take many an explanation and many a demonstration to convince a class that a number of three figures, as .875 is not larger than a number of one figure, as 7. This is shown in many ways, according to the understanding of the class. One very plain way is to divide 10 by 2, then 8 by the same divisor, then 6, 4, and 2 in order. The pupil sees that the smaller the dividend the less the quotient, and if the quotient is 1 in the last case, it must be less than 1 if a smaller dividend is taken. Then he sees that whereas .875 looks like a larger number than 7 it must in fact be less than 1, and he can be made to see that the decimal point makes the difference in the *value*.

The learning of division of decimals is made easy by first taking a whole number for the dividend and a one-place decimal for the divisor, as 964 ÷ .4. As a first step, therefore, the pupil moves the decimal point one place to the right and thereby frees the divisor from decimals. That the relative value of dividend and divisor may not be changed he knows he must multiply the dividend by 10, which he does by adding a naught. It was learned in multiplication of decimals that to move the point one place to the right was the same as multiplying by 10, to move the point two places to the right was the same as multiplying by 100, etc. This idea of clearing the divisor of decimals is continued with a divisor of several decimal places or until all of our ordinary decimals have been used as divisors, when a similar method is pursued with the dividend a decimal, and then with both divisor and dividend as decimals.

Percentage. Percentage cannot be taught without constant applications of the principles and processes involved in common and decimal fractions. These applications constitute the first step in learning what percentage means. The meaning of the word per cent., as so many out of a hundred, or so many hundredths of a whole, is emphasized. Next it is shown that per cent. may be written $\frac{6}{100}$, .06 or 6%. Then the simple work of finding $\frac{6}{100}$, .06 or 6% of a number is drilled until the method of finding the percentage of a number is fully impressed upon the class. The second step is to find a number when a part is given, that is, to find the base when the rate and percentage are given, and then to find what part one number is of another; that is to find the rate, when the base and percentage are given. A good deal of attention is paid to the per cent. equivalents of the business fractions and their simple applications.

Commercial discount is taught, using the single discount and the discount in series. In the latter we seldom use more than two discounts. Types of examples in discount follow: (1) I buy a history marked 60 cents, an arithmetic marked 65 cents, a geography marked 95 cents, and a grammar marked 75 cents. A discount of 10% was allowed on this. What did I have to pay? (2) John buys a baseball glove marked $2.50, a ball marked $1.00, a bat marked $1.25, and a suit marked $4.75. A discount of 20% from the catalogue price was given and a school discount of 10%. What does he have to pay for his outfit?

Profit and loss, commission and brokerage are mentioned in the year's work, but they are used only in the simplest way and only in the application of the simple principles of percentage. In commission we take only a per cent. on a sale or purchase, and obtain interest for years only, not for months and days.

R. A. K.

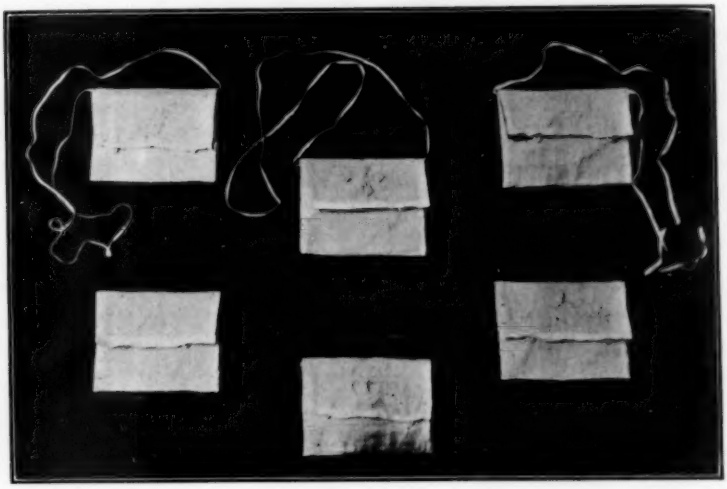
MANUAL TRAINING (Girls)

Grade VI

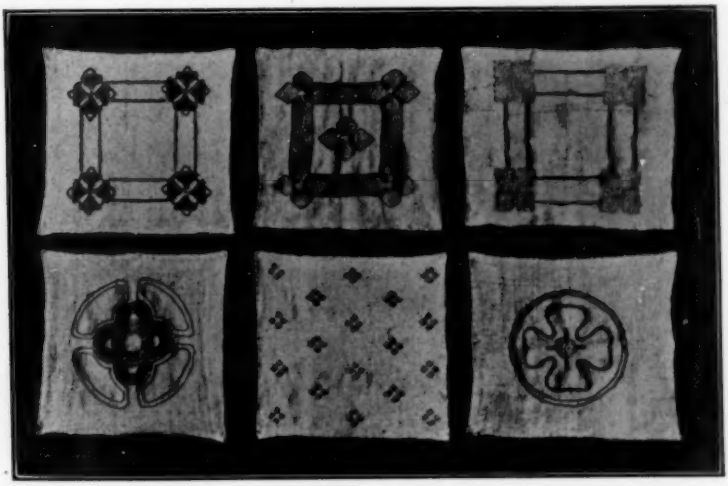
The work in domestic art begins in the latter part of the fifth year, when the boys and girls are separated in their manual training, and continues through the sixth year. The aim throughout the course is to awaken the girl's thought and to train her judgment and taste as well as her hands; to make the work a necessary part of her life, especially in the home; to show her the easy and natural use of the needle; to cultivate habits of neatness and orderliness; and to give the feeling of independence which comes from knowing how to do things for one's self. Further the aim is to give some idea of the origin and development of the materials used, the relative cost and value of materials and their suitability to the purpose for which they are used; to show some practical application for work in design; and to supplement the other school work wherever it is possible by talks and by illustrations of various kinds. For example, while the children are studying mediæval times, the method of making the ancient tapestries which formed so large a part of the woman's life at that period is discussed. A small modern tapestry loom is studied and the process contrasted with other methods of weaving already familiar. Some study of textiles is made by the children, and discussions are held in the class; occasionally papers are written for which outside time is given from the English work.

It is impossible to present all sides of the subject in the short time given to it, but certain problems are chosen which show the underlying principles. The problem taken up at the end of the fifth year has been the building and furnishing of a miniature house;[1] this gives a common interest to the work of both the

[1] See Elementary School Curriculum, Fifth grade p. 103.



Traveling Cases. (See page 54).

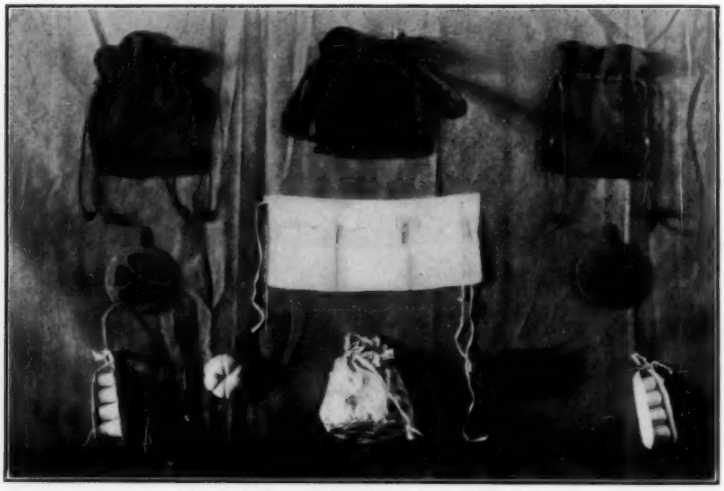


Covers for sofa cushions. (See page 55).

Work of girls in sixth grade Manual Training.

boys and the girls, and offers an opportunity to study harmonious effects in color and design in connection with the home. The boys do the woodwork, while the girls make the curtains, draperies, cushions, and table covers. These articles require careful and accurate measurements, and give practice in such stitches as running, stitching, overhanding and the turning and basting of hems.

The work of the sixth grade gives increased facility in the use of the needle and continues a training most necessary in the development of capable and helpful women. The stitches taught are those which are needed in everyday life. The different articles chosen may vary from year to year and these are made as attractive as possible by simplicity of design and good workmanship. At the beginning of this year a small traveling case for money or jewelry was made. The material used was lawn or linen, so that it might be easily laundered and always kept clean and dainty. A design drawn in the art class was traced



Various articles made in this year.

on the lap of the case and embroidered. A chamois bag was then made to fit inside. Such an article gives practice in the application of many stitches, including hemming, overhanding, outlining and blanket stitch, also the making of loops for buttons,

and the sewing on of buttons and tapes. Two or three lessons before Christmas are usually devoted to making useful but attractive little gifts, such as pin, spool, or ribbon cases, and opera-glass bags of silk or leather. The various cases give an opportunity for the review of stitches and principles already familiar.

The next work taken up was the designing, embroidering, and making up of the cover for a sofa cushion. The design was worked out in the class and then traced on Russian crash. The grayish color of the linen and its coarse texture make an excellent background for the embroidery, which is done with colored linen thread. Old textiles and Japanese prints are studied to obtain good color schemes. The darning-satin, outline, and couching stitches are best suited to this work. Darning on stockings follows. As soon as the stitch is learned on a practice piece, a stocking is brought from home and darned in the class. Mending a three-cornered or hedge tear in some kind of woolen goods is then taught. These special problems are chosen because girls of this grade are most likely to make use of them.

Toward the end of the year some fancy stitches, as feather-stitching and hemstitching, may be applied to collars and cases of various kinds, or to work-aprons which the children may use for their sewing.

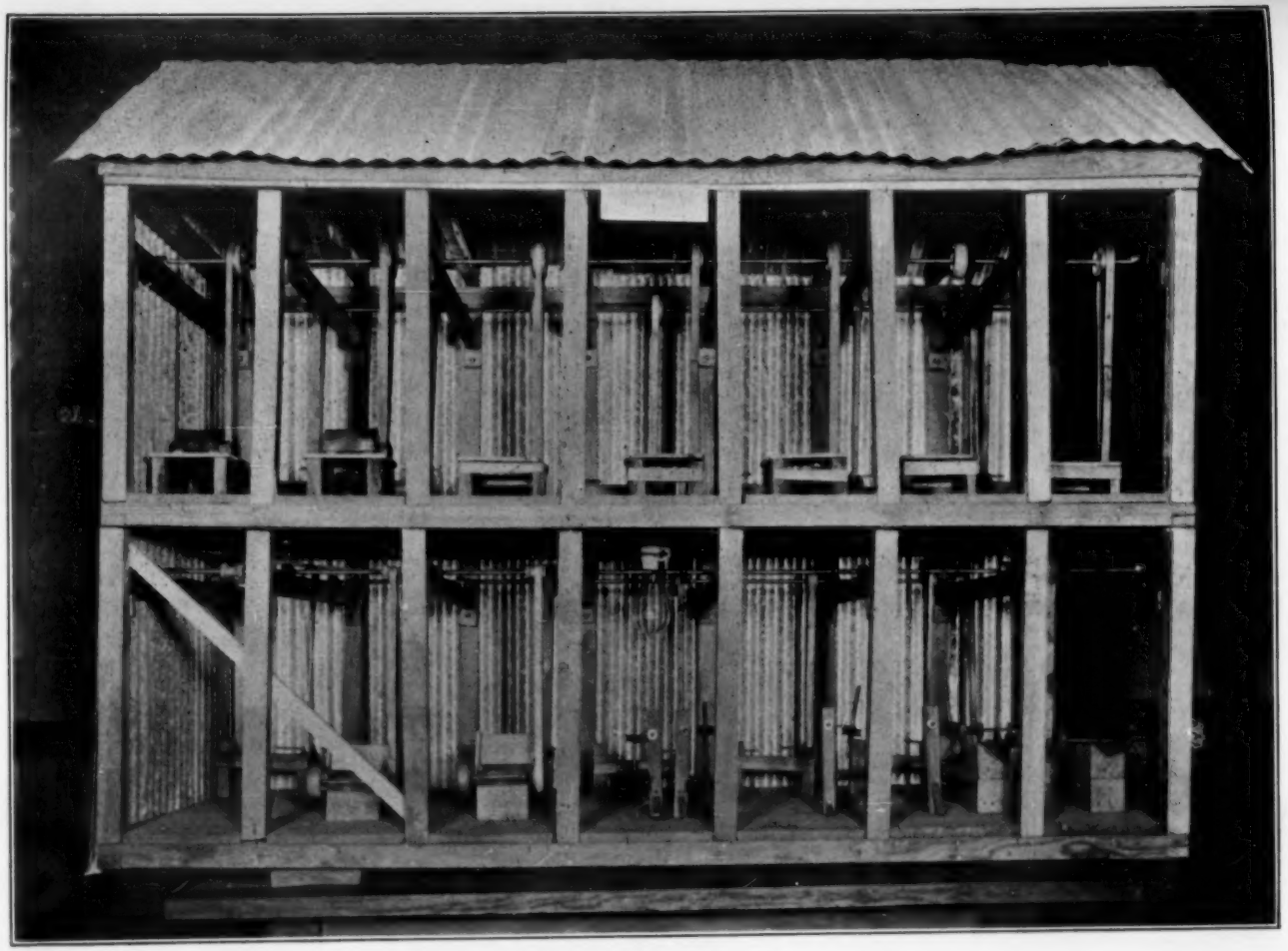
K. S. A.

MANUAL TRAINING (Boys)

Grade VI

From the handicraft work of the preceding year the sixth grade advances to a study of the factory, or mill, as illustrating the modern method of production. In carrying forward this study, the class constructs a model of some type of factory and installs models of machines, which are belted to lines of shafting and driven with water-wheels. Along with the constructive work, and of fully equal importance, is the study of an actual factory, its system of organization and division of labor, the source of power, and the nature of its processes and products. Visits to shops and mills are an important help in this part of the work.

Just how the study is conducted may perhaps best be illustrated by describing the work of last year. After a discussion of the importance of the factory in modern industry, how its great development was made possible by the introduction of power and by the division of labor, the boys suggested various kinds of factories that they would like to build. The machine-shop was most popular, and it was proposed to combine with it the wood-working mill, second in choice, in order to represent a complete equipment for manufacturing in wood and metal. The erection of a suitable building for this equipment was discussed by the class. The problems were presented as to what kind of construction was required to accommodate heavy machines, and how these machines should be arranged with reference to their operation and the use of power. The boys thought out the different problems quite intelligently, and gave a number of good suggestions as to how the factory should be built. They suggested that the most particular work needed the best light, that the heaviest machines should be near the walls, that machines of the same kind should be grouped together, and that they should be placed in rows in order to receive the power from the lines of shafting. The ideas brought out were reduced to a definite plan which was drawn on the board, and from it a lesson



Mill. (See page 56).
Lower floor representing a machine-shop, and the upper floor a wood-working mill.

was given on the names and functions of the principal structural parts of the mill, and the methods of framing them.

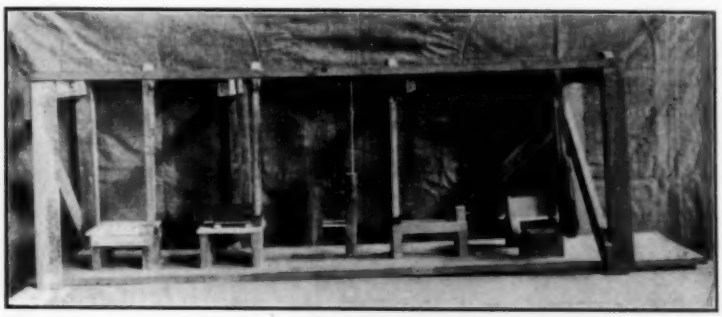
The class was then organized into several construction squads for the purpose of erecting the factory building. Long strips of wood were provided, and each squad proceeded to make and assemble its assigned part. When the boys on the sill and plate group had completed their part, they located the places on the sill and plate for the studs, floorbeams, and stringers. As each portion was finished, it was put in, the roof trusses were placed, the floor laid, and the entire class of twenty to twenty-five boys was kept busy up to the time the building was completed.

The next part of the work taken up was the machine equipment. The boys were asked to describe some kind of machine that they had seen in operation. While most of the boys could describe a machine as to its outward appearance, few could tell how it worked, or what was its value as a producer. Their observations as a rule had not penetrated below the surface. Visits to shops were made with the definite aim of securing the important facts about the things seen in these shops. Previous to taking a class on a visit, questions were given to the boys to be written in their pocket note books with spaces between the questions for answers. The boys were asked to note the name of each machine and its purpose, to describe the cutting tool, the kind of power used, and how the work was held in the machine.

When the class went on a visit to a mill, and the use of the various machines was observed, each boy was kept busy filling out his answers and making sketches, and as a result he came away with certain definite ideas, and was too much occupied during the visit to get into trouble. It has been said that it is useless to take classes of young boys on visits to shops, because they have little knowledge of what they see, and do not appreciate the meaning of it all. We find, however, that if the boys have become interested in the work of such shops, and if they know definitely what they are to look for, there is no question that the results realized are worth while. Papers were written describing these visits as part of the home work, and at the next lesson a discussion on the meaning and value of the division of labor was held. The boys described how the work was passed from man to man, each doing a part, and only one part. Reasons

for having a man do but one small part of the work—just one operation—were asked for, and the suggestion was soon forthcoming that repeated practice enables a man to do one thing better and quicker. This, it was seen, meant less cost in labor, power, and room, and made the workmanship more uniform. On the other hand, it was suggested that to do but one thing all day and to know nothing else, was a disadvantage to a man as it hindered his advancement and gave him little to think about.

Models of machines were made for the mill, each boy making one machine. The wood-working mill was equipped with models of wood planers, circular saws, and lathes, and the machine shop with drill presses, lathes, and planers. As each boy completed his machine, he installed it in the place planned for it, and then helped to build and put in a line of shafting and pulleys,



Machines.—Saw table, wood planer, drill press, lathe, metal planer.

and to run and adjust his belt. Class discussions were held on the subjects of shafts, bearings, hangers, and belts, as these elements were met with in the progress of the work.

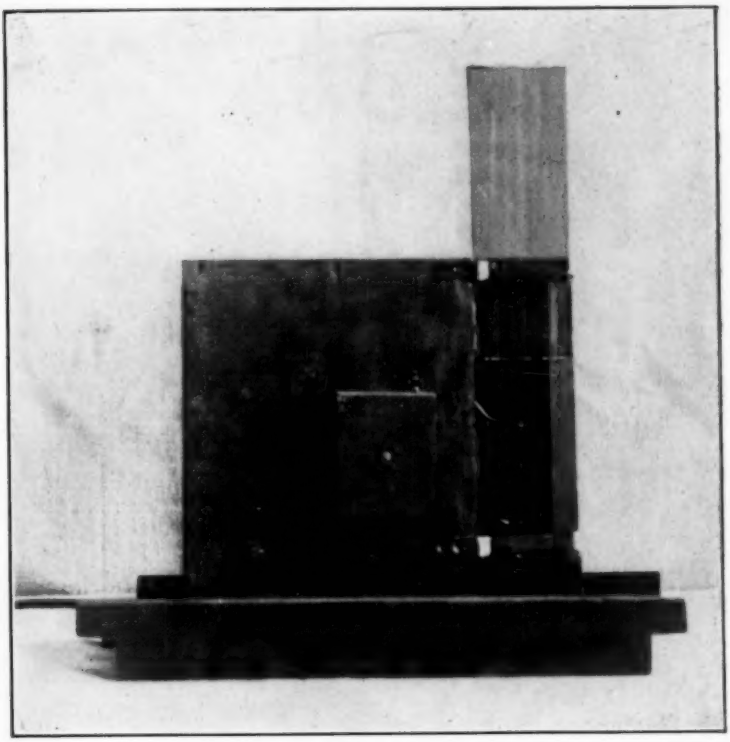
The subject of power was then studied. The boys named the various sources of power with which they were familiar, as the steam engine, electric motor, gasolene engine, hot air engine, water wheel, and windmill. The value and general uses of each were discussed, and the boys decided that the water wheel was the one type that they could make. Different kinds of water wheels were considered, making use of the observations of the boys in the country and in traveling. Catalogues and pictures were also shown. The impulse or jet wheel was chosen as the one best suited to be run by the city water supply. A model

was shown the class with a demonstration of its operation and the question of the best form of buckets was brought forward. Various shapes of copper buckets were made and tested to find out which was the most efficient. The double-cupped pattern was proven to be the best, and a set of dies was provided at the suggestion of the boys, so that the buckets could be stamped out in copper in modern fashion. Each boy built his own wheel, and made the buckets for it. When the wheels were finished they were tested, and four of the best were picked out and coupled to the driving shafts of the mill. These four were sufficiently powerful to drive the entire plant.

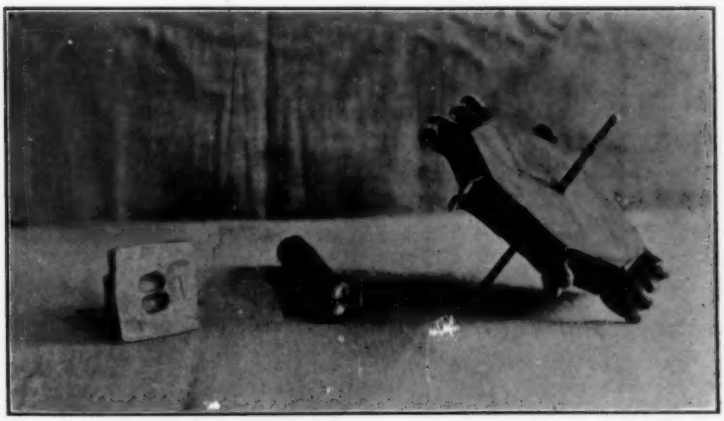
The project as a whole combined co-operative group work with individual work. Each boy, when the project was finished, had a machine and a water wheel to drive it. At the same time he had co-operated with the other boys in his class in building and equipping the model mill, he had met the problems this work presented, had played a part in solving them, and was rewarded by seeing his work form an essential element in the whole result. Owing to the group organization of the work, the boys showed little of the tendency to lean on the teacher that is often the case in individual work. With responsibility placed upon them they found it necessary to act on their own initiative and to do their own thinking.

The subject of the power driven factory, complicated and difficult as it appears at first sight, is in reality admirably suited to the boy of the sixth grade. His awakened interest in things mechanical, things that "go," is here given play and utilized to accumulate ideas. Individual ingenuity and initiative are aroused to the utmost by the constructive problems that the work presents, and the fundamental ideas of the factory organization are grasped with surprising readiness through this intimate constructive experience. The boys obtain a broader experience in handwork in making this project than they would in making a course of useful models in some one material. There are a greater number of simple tool processes, and a larger variety of materials to work with. The subject is intensely interesting to the boys, and the ideas and principles are of value in the writer's judgment, far beyond the possibilities of any course of so-called useful models.

E. G. McN.



Water Wheel. (See page 60.)
Glass raised to show buckets.



A wheel with buckets attached, and the dies with which the buckets were stamped. (See page 60.)

ART

GRADES VI AND VII

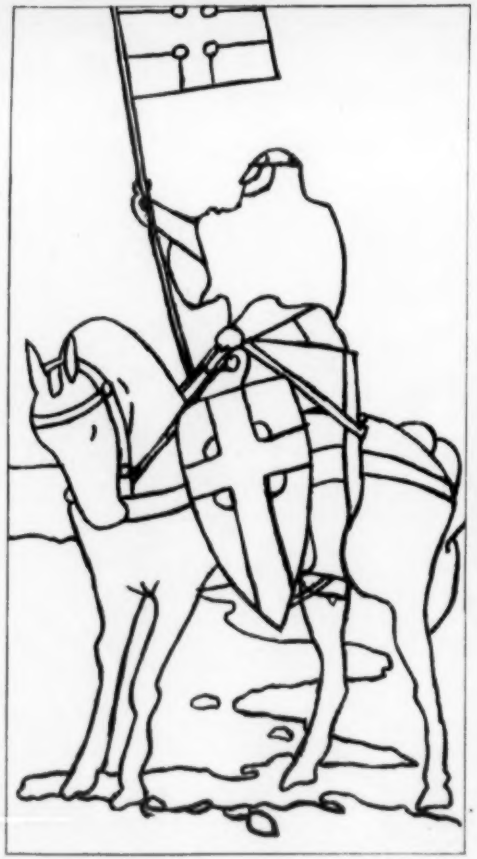
Since the articles published in the previous numbers of the TEACHERS COLLEGE RECORD have fully explained the aim of the art course and the method of presentation, it is not deemed necessary here to enter into detail concerning those phases of the work.

The structural elements, spacing, massing, and coloring, form the basis for choice of subjects in all the grades. Experience in the creative use of these elements cultivates good judgment and ability to express ideas in art form. A growing appreciation of harmony in form and color develops power to draw and to design. We find that pupils in the seventh grade show less interest in merely representing and more in designing in line, mass, and color.

The plan in general for the sixth and seventh grades is as follows:

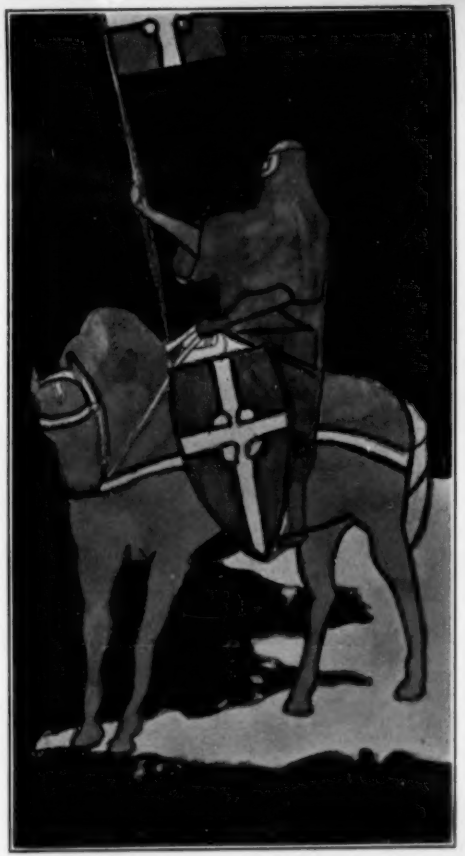
1. The statement of a principle, its illustration in design and expression.
2. Exercises in the use of the principle in creating harmony.
3. Application of these exercises in design, handwork, pictorial work, or in drawing from nature.

For example, the seventh grade this year after two months' work criticised their own productions (designs for the cover to be used on the Christmas number of *School Days*) because they lacked strong dark and light massing. Fine examples of dark and light massing were found in photograhpic reproductions of Venetian pavements. From a number of enlarged drawings each child made his own choice and copied, keeping in mind that his aim was to reproduce the same proportion of dark and light. This was followed by original designs in dark and light. The children in these grades, especially in the seventh, are able to feel the lack of harmony in their work, and wish to know what the masters of art have to say on the question, therefore they are taken to the world's masterpieces to learn. The



Outline Drawing.

Massing in dark and light.



Massing in dark and light.

Design for stained glass window.

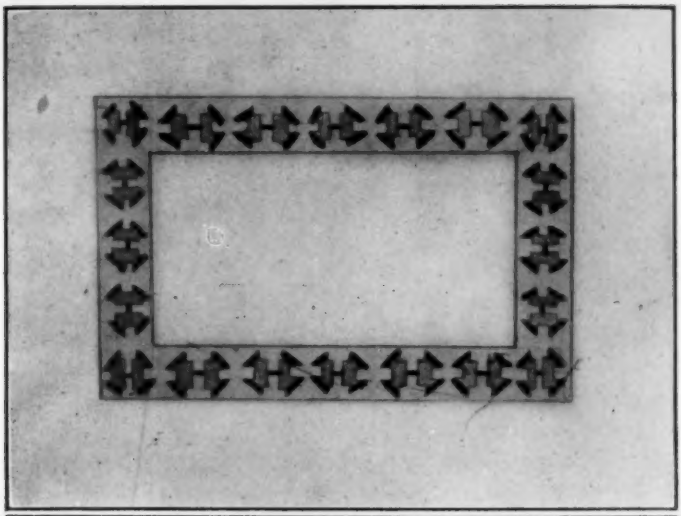
appreciation of a certain art principle as embodied in the creation of a master, forms the standard of criticism for that child and makes clear the aim of all future work using that principle.

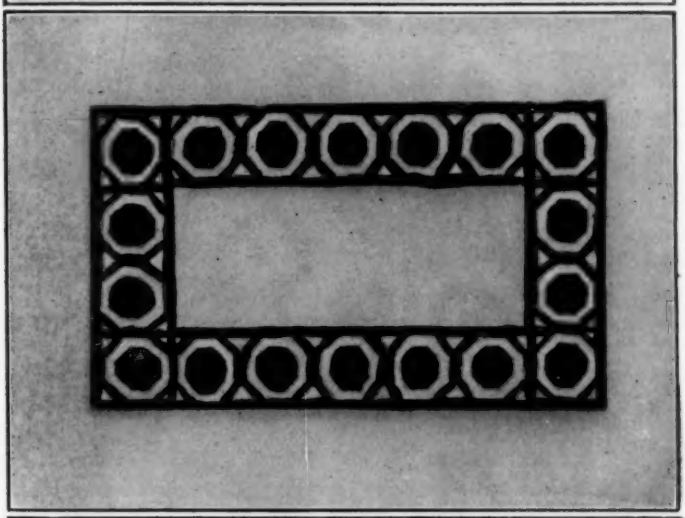
Care must be taken in criticising the work of these grades that we do not err by placing undue emphasis on the execution and thus lose sight of the aim of the art course which is appreciation. As Ruskin says—"Always look for invention first, and after that for such execution as will help the invention. Above all, demand no refinement of execution where there is no thought, for that is slaves' work unredeemed. The demand for perfection is always a sign of a misunderstanding of the ends of art."

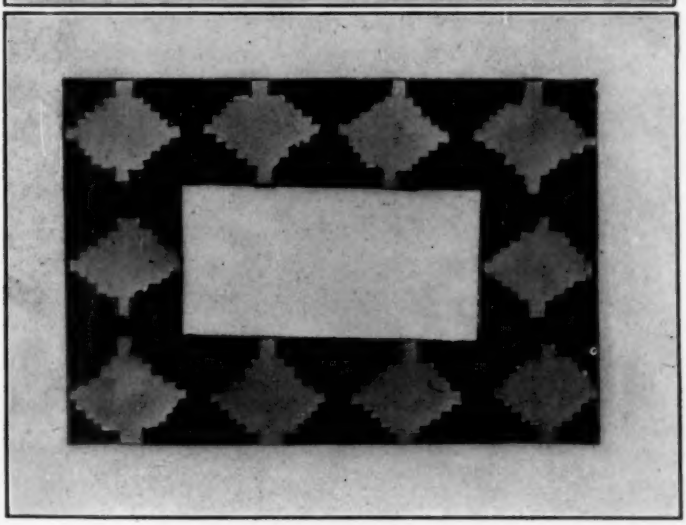
The following subjects are used as exercises in developing harmonies of line, mass, and color. No attempt is here made to give them in their logical order. The order in which they are given varies according to the ability of the pupils and the other subjects of the curriculum.

GRADE VI

I. Art during the Middle Ages.
   1. Shields.
      (a) Strong ink lines.
      (b) Strong color.
      (c) History of development of forms and designs.
      (d) Talk by the teacher.
   2. Old castles.
      (a) Pencil sketching.
      (b) Appreciation of mediæval architecture. Study of illustrations by Jules Guerin.
   3. Books and manuscripts.
      (a) Wood-block printing.
      (b) Illuminating.
      (c) Life of Wm. Morris.
      Venetian printers.
   4. Stained-glass windows.
      (a) Subjects—shields, flowers, castles, and knights. (See page 63.)
      (b) Color harmony.
   5. Sculpture—Talk by teacher.
      (a) Giotto's Tower.







Designs for book covers.

(b) Figures in panels of Amiens Cathedral.

6. Pavements.

For study of dark and light designs in a square.

II. Subjects suggested by colonial history.

1. Dutch wind-mill as motive in a design.
2. Plates in blue and white.
3. Pose—Puritan costume.

III. Still-life groups.

Elements influencing choice of objects, and arrangement.

(a) Variety in shape and size.
(b) Light and dark.
(c) Harmony of color.

IV. Book covers. (See page 65.)

1. Spacing a rectangle.
2. Design for borders.
3. Color.

V. Flowers and fruits.

1. Drawing.
2. Massing.
3. Color.

GRADE VII

I. American illustrators of to-day—Howard Pyle, Elizabeth Shippen Green, Jessie Wilcox Smith, Edwin Abbey.

1. Color schemes made from a study of magazine illustrations. For example, one exercise might be to make a color scheme of one light and two dark colors, or three values of the same hue as they are found grouped in "The Pirate" by Howard Pyle. This color scheme is later applied to an original design in either landscape or pose drawing.
2. Copying drawings of animals and figures to study characteristic lines, dark and light massing, and harmonious colors. The drawings of animals by Nicholson, Bull, or Parks are suitable for this work.

II. Book covers.

Design for Christmas number of *School Days*.

(a) Spacing a rectangle.

(b) Practice in drawing strong ink lines.

(c) Lettering.

(d) Dark and light massing of the design.

(e) Application of a selected color scheme.

III. Still-life group, chosen to illustrate hue, intensity, and dark and light of color. This work is preceded by a critical study of Japanese color prints.

IV. Nature and pose drawing.

As exercises in line, mass and color.

E. M.

MUSIC

Grades VI and VII

The time set apart for music in the sixth and seventh grades is given up at present almost entirely to chorus drill. In both years the aims of the chorus singing are to keep up a lively interest in the work, to gain accuracy and prompt response to signals, and to further develop the love and appreciation of good music. The learning of notation and drills in reading required of the boys and girls in the earlier grades now find their direct application in the singing of good songs and enable us to give point and variety to this later work. Appreciation demands both analytic power and imaginative response. Just as in English studies the upper grade pupils learn something of the principles of grammar and composition in order that they may read with greater pleasure more difficult and varied literature, so the knowledge of musical terms and the perception of musical forms enable us here to understand and to sing songs of many kinds. Some of these contain the words of familiar poems, such as Heinrich Heine's "The Loreley," Longfellow's "Ship of State," and Burns's "O, Wert Thou in the Cauld Blast." Some, like "The Star Spangled Banner," "Men of Harlech," and "Forth to the Battle," are patriotic or heroic; others, like "A Capital Ship," and "All Through the Night" are humorous or pathetic. Many are simple folk songs, such as "Auld Lang Syne" and "The Auld Folks at Home." Each song as it is learned is carefully analyzed as to the thought in order that the singing may be intelligent and sincere.

At the beginning of the year each voice is tested and the pupil assigned to the part better suited to the quality or range of his voice. The habit of singing only one part is, however, likely to deprive the pupil of readiness in carrying any part independently; it may also limit his range and fail to give the necessary ear-training. To offset these difficulties we sometimes change the parts about, letting the sopranos try the second, and the altos the first. For the purpose of developing a clear, well-

sustained tone we introduce the chorus period with short vocal drills, such as the *doh*, *me*, *soh*, *doh* arpeggio, and the octave skip, beginning in either exercise on various pitches and using the syllable names and different vowels. The chord work begun in the fifth year is used as a vocal and ear-training drill, and each voice is given practice in singing the low, middle, and high tones in the chords.

By means of steady practice in work of this kind we expect our pupils, at the end of the sixth year, to read and carry the first or second part in songs and canons, to produce a clear, free tone, to enunciate distinctly, and to sing their songs with understanding and imagination. The seventh year chorus, because of longer practice and experience, can sing more difficult songs and read in one, two, and three parts. After continued drill in analyzing the structure of their songs, they are able to notice at a glance repeated and slightly modified phrases. This greater ease in the reading of music, together with spirited imaginative rendering of the words, will result, we hope, not only in good singing but also in genuine love of music.

H. L.

PHYSICAL EDUCATION

IN THE SIXTH AND SEVENTH GRADES OF THE HORACE MANN SCHOOL

The health and physical development of the child are prominent factors in the educational system of the Horace Mann School. Physical education has attained a dignity equal to that of any of the traditional studies of a school, and has its place in the regular curriculum, forming a part of the schedule of each child.

At the beginning of the school year, each pupil is measured and examined, abnormal conditions and tendencies are carefully noted by the school physicians, and reports of such conditions are sent to parents with suggestions regarding further medical attention if such seems advisable. Reports of health conditions are also sent to teachers which enable them to provide for better adjustment of school work to the individual needs of the pupil. Such information is especially important for the instructors in physical education, who are thus better able to guard pupils against injuries from overwork or strains from excessive exercise.

The work for the sixth and seventh grades is planned throughout with a definite regard to the environment in which the children live in our large city, and to the individual needs of the pupils; the children are not made to conform to a system of physical training which has been devised without a real and definite knowledge of their needs.

The gymnasium period is distinctly not a period of uncontrollable play and haphazard work, with the one aim in view of giving to the child complete relaxation from the routine of the class-room, and which, at the end, finds the pupil demoralized and out of sympathy with all restraint. On the contrary, the work is thoroughly planned, there is a definite aim in view for each period, and the same good order and deportment are observed on the gymnasium floor as in the class-room, and the same application and attention to the work are required. While the gymnasium work is arranged so as to allow for relaxation and recreation, yet there is such a balancing and proportioning

of formal and recreative exercises that the class returns refreshed physically and mentally, and better able to take up the routine occupations of the class-room.

The aim of the work for each period is three-fold: educative, recreative, and hygienic. While these three aspects of physical education overlap, and are often attained by the same means, yet they are sufficiently distinct so that the work is planned with these different results in mind.

The educational end is kept constantly in the foreground not only in the formal work, but also in the games. That training is invaluable to the child which comes from the prompt, precise, and unquestioned response to all commands, from the performance of each exercise correctly, and in unison and harmony with the action of the class, thus subordinating self to the whole. In addition to this the child gains a peculiar and important training from learning to control his actions, to think quickly and accurately in a sharply contested game, in which the least error on his part may result in the loss of the game and the consequent disapproval of team mates. As has already been indicated, the recreative side of the work is much emphasized; attention is directed to those pupils who have never had the opportunity for play that is demanded for their best development, and they are urged, encouraged, and often required even to take part in the games of the class period. Not alone by games is this demand for recreation supplied, but each pupil is made to feel a responsibility for and a pleasure in the precision, spirit, and finish with which the exercises are done. This pride in the class work, gymnastic contests between the sixth and seventh grades, and the occasional selection of the boy who does an exercise best, all keep up the interest in the work and make it a pleasure rather than an exercise which is to be avoided when possible.

The more tangible organic benefits of the gymnastic lessons are sought in effects which may be considered as hygienic, corrective, and developmental. While the same exercise may and often does accomplish all of these results, yet this is not necessarily true, so in the arrangement of exercises movements are selected with reference to each of these three results.

First of all the work aims to secure, maintain, and establish the health of the children, and at the same time to insure a

constant and steady development of the groups of large muscles, and the strengthening of the vital organs, and also to promote skill in motor expression and co-ordination of the various groups of muscles.

Much stress is laid upon the corrective side of the work. While this is largely accomplished by the performance of each movement in the best possible form, other exercises are added which will correct faulty posture, tendency to round shoulders, and aid a symmetrical development.

In addition to the gymnastic work, all the pupils in these grades have the privilege of receiving instruction in swimming under the direction of a skilled teacher. Most of the pupils learn to swim and dive, many becoming expert in some of the simpler strokes.

In the fifth, sixth, and seventh grades the boys and girls are separated for gymnastic instruction, as it is important to provide appropriate and different types of exercise for each sex.

The time of the boy's class period is generally utilized as follows: The first few minutes are given up to facings, marching, and simple class formations; then calisthenics and free exercises are given for about fifteen minutes, after which the class does apparatus work for some seven minutes,—a simple vault on the buck or a high jump or a hanging or climbing exercise. The remainder of the thirty-minute period is taken up with games.

The character of the exercise is entirely changed during the spring months, when the classes are taken to the playground. The work then is largely athletic, and is participated in by all of the boys. The purpose of this work is not to develop athletes as such, but to give the boys the training which can only come from athletic exercise and games.

The regular prescribed work for the fifth and sixth grades consists of two thirty minute periods for gymnastic exercise and one thirty-minute period for swimming each week. During the year contests are occasionally held between the two grades, the one in the spring being in the nature of a track meet. These contests stimulate interest in the class work, and at the same time offer an opportunity to judge the ability and progress of the individual boys.

A brief outline of the work is given below:—

Free exercises.

1. Marching and simple class formations.

2. Various combinations of body, arm, and leg movements arranged to secure a gradual progression by the introduction of more complex movements from day to day, designed to correct faulty postures and strengthen the activity of the vital organs.

Apparatus.

1. Hand apparatus.
   (a) Wooden dumb-bells.
   (b) Medicine balls.
2. Heavy apparatus.
   (a) High jumping from floor, from springboard.
   (b) Horizontal ladders.
      (1) Hanging exercises with arm flexion.
      (2) Hanging exercises with travelling forward and backward.
   (c) Stall bars.
      Hanging exercises with knee flexions and leg extensions.
   (d) Ropes.
      Climbing.
   (e) Buck and horse.
      Simple vaults with and without springboard.

In all apparatus work attention is directed to the form in which each exercise is executed.

Games.

1. Basket Ball
2. Games with Medicine Balls
3. Relay races
4. Obstacle races
5. Follow the leader
6. Indian club races.

In addition to the work as outlined above, each boy is given the option of attending, and is urged to be present at, two after-school classes each week. In these classes, which are largely attended, no formal class exercises are attempted, but the work, which is more recreative in form than the regular class work, is carefully watched and directed. The time is devoted to such games as the boys may select, and to apparatus work in jumping and vaulting, the choice being left very largely to them.

Basket ball is the favorite winter game, while baseball and track work are the most popular for the spring months. A series of basket ball and baseball games are played between the teams representing the different grades. The rivalry between these teams is very keen and a place on any one of them is regarded

as a position of honor, and is eagerly sought. A limited number of games between an all elementary team and teams representing other schools are played.

The aim of these games and contests is to accustom the boys to work together. They give to each child complete relaxation from all class routine, and yet demand of each a harmonious subordination of his activity to the activity of the other members of his team, such as he must do if he is to realize the greatest pleasure and good.

In the free exercises as well as in the games the child is urged to merge his own individuality into the individuality of the class, and to work in true co-ordination with the other members to bring about a harmonious whole. This working and playing as a part of a whole rather than as a separate individual is of great value in developing the social side of the child's consciousness.

The same amount of time in the school program is devoted to the physical education of girls and boys, but separate classes are provided for them from the time in the fifth grade when some of the girls enter the period of rapid growth preceding adolescence.

In the sixth and seventh grades, the successful adaptation of exercises to the needs of girls requires more care and discrimination than for boys. Many of the girls in these grades are increasing in height and weight very rapidly, and many individual as well as general problems for adjustment are presented by the variations which present themselves. At no time in school life is regular systematic exercise more important, and its appropriate selection and adaptation more difficult. The heart is often temporarily outgrown by the rest of the body at this time, and careful limitations of exercises of strength, speed, and endurance are necessary for many pupils. While the regular work of the gymnasium is conducted in classes, it is modified as seems necessary to meet the needs of the individual pupils. The forms of exercise for the girls include marching, free gymnastics, exercises with apparatus, dancing, swimming, and games.

Enough marching is given to provide drill in concentrated movement and in the details of correct carriage, and alert, well controlled action. The free gymnastics furnish opportunity

for exercises to correct tendencies to faulty posture and to improve voluntary control of definite bodily movements.

The girls are taught lighter forms of apparatus gymnastics suitable to their strength and needs. These increase the variety of exercises and improve the command of actions involving the weight of the body in relation to various objects, bringing gradually a self-control valuable for the meeting of various forms of emergency.

Dancing for girls of this age has a pronounced value. The term is not used here in reference to the dance of the stage nor to the conventional dance of society, but rather to the wealth of interesting material in the folk and national dances, with their historical significance and the wide opportunity afforded through them for training in grace and beauty of movement. No form of activity in the past has been more universal or more valuable than the dance for the artistic expression of the range of human feelings in the life of many peoples, while at the same time providing recreation and wholesome exercise. No form of motor activity has greater possibilities for the youth of to-day, and for girls particularly, than dancing if the varied educational values are recognized and the different forms of the dance are successfully adapted to the pupils according to age, season, and conscious interests.

Swimming is recognized as a very beneficial exercise and training for girls, and generous place is provided for this in the gymnastic programs.

A definite place is also made for games without allowing them to monopolize too much time or strength. It is recognized that certain social and moral qualities desirable for girls or boys can be better cultivated by games than by any other form of exercise. While the same qualities in general are sought in the games for all pupils, it is recognized that considerable differentiation is necessary in games suitable for girls as distinguished from boys, not only in the games selected, but also in the rules governing them.

The end desired in all the physical education instruction is the improvement of the girls' efficiency for present and future usefulness.

HOME STUDY

Grade VI

The problem of home study—of the extent to which the school should be permitted to encroach upon the child's outside activities, his home life and his play—has not been made easier of solution by the modern transformation in educational methods and ideals. If the problem was a serious one in the period of long school sessions, when the daily program was mainly limited to the "three R's," it presents new and formidable aspects at a time when the curriculum has been expanded and enriched to meet new demands, and when the school day has been shortened by one third or more. However the outside world of parents and friends may regard the matter, it is an article of faith with the teachers that in a school of the character of the Horace Mann, with its broad and varied curriculum, its exacting standards and its spirit of independent work, a certain amount of study at home is an indispensable adjunct to the work of the class-room.

It is only proper to say that this conclusion has not been reached in disregard of the social and domestic conditions by which our pupils are surrounded. It is realized that school life is not the whole of life and that an important, perhaps the most important part, of the education of the child is gained in fields of activity with which the school has nothing to do. We are not blind to the fact that a large proportion of the children have outside lessons in music, in dancing, and in the languages, and that all of them need ample time for play and for performing their part in the home life of the family.

We attempt to keep the balance between the interests of the school and of the home by assigning a modicum of home study when the children reach the age of independent work. In the fourth year they are expected to spend from one half to three quarters of an hour in study at home, in the fifth grade from three quarters of an hour to an hour, in the sixth from an hour to an hour and a half, and in the seventh from an hour and a

half to two hours. These periods, added to the school session, make on the average no greater demands upon the child's time than are made by the daily school hours of the ordinary public school, yet by carefully regulating the character of the home assignments and by helping the children to form better habits of study they are sufficient to meet the requirements of the school while they yet allow time for outside duties and pleasures.

The old-time doctrine that home preparation is an essential feature of each recitation of the day is, fortunately, no longer an article of our educational creed. It is now recognized that the highest vocation of the teacher is not hearing child after child recite what he has learned at home. It is acknowledged that many a recitation period is better spent in the development of a subject, in its discussion, or in its study, than in its reproduction. This attitude towards the recitation reacts directly upon the home study period and makes it possible to devote this time to a variety of lines of work rather than to preparation alone. In fact, in our elementary school the study of a topic at home more often follows its presentation in class than precedes it. This method has a double advantage—it throws the burden of thought upon the child, he is not led into the temptation to accept passively the statements of the text-book but, under the stimulus of the teacher's questions, is roused to discover truths for himself, and in the second place it sends him to his task with an intelligent interest in what he is about to do.

Nor does this plan remove all obstacles from the path of learning as some critics of the new education would have us believe. On the contrary, if the class presentation has been a skillful one, the teacher has left her pupils with more difficulties in the way of unanswered questions to face and situations to explain, and more thoughtful applications of principles to make than would confront them in the much lauded operation of "working out for themselves" the obscurities of the text-book. For instance, if in the geography class the physical and industrial conditions of New England have been discussed, the home assignment may be to select from the atlas the large cities of the section and to account for their location. Such work, involving as it does independent application of principles developed in class, exercises the judgment and furnishes the mental stimulus that original work excites. Home

study of this character is of far more value in the way of training than the reading, memorizing, or even the assimilation of the ideas of the text-book. Again, a lesson in physical nature-study that develops the truth that air is compressible and elastic, suggests for home-work the making of a list of familiar appliances in every day use that are illustrative of this characteristic of air. An assignment of such a nature not only encourages the child to be observant of the agencies about him, but as he will naturally discuss the question at home, it enlists the interest of his parents which is in itself a valuable thing, and it impresses upon the young student the fact that the principles which he learns at school have more than an academic value, that they are forces in the life of the world about him.

Frequently the home study takes the form of a review or summary of the work done in the class-room. The impetus given to exploration by the blocking of the old trade-routes to India may have furnished material for a series of lessons in history. The resulting home-work may consist of a brief résumé of the controlling features of the situation, either in outline form or in the shape of a composition. Here again the child's judgment is exercised as he selects the few essentials from a multitude of non-essentials. His mistakes in judgment are corrected when the results of the home-work are compared on the following day in the class-room.

Again we find that amplification of a topic under discussion in school is valuable as home-work. Life in the jungles of Africa may have been the subject of a recitation in geography, and to supplement the class-work the accounts of various travelers, such as those of Stanley, Du Chaillu, Knox, and Carpenter, may be assigned to individual children as home-work and reported upon to their classmates. The thought that must be given to the selection of material and to its orderly arrangement and clear expression gives training of no little value.

Sometimes the home study-period is utilized to give the drill necessary to secure rapid and accurate work. In arithmetic the mechanical processes that are essential to the solution of problems should be used by the children as instinctively as a workman uses his tools. Such skill in the manipulation of numbers is acquired only by much practice so, as the hours of the school day are all too short to permit the requisite amount

of it, we utilize the home-study period to give additional drill. Concrete problems form legitimate home-work only when the steps involved are sufficiently apparent to be intelligently solved by the children. When a problem is of such a nature that a child attempts to solve it by multiplication and if that fails to give the required answer, promptly turns to division as a possible alternative—in other words, when he resorts to guessing rather than to reasoning—it is a pretty sure indication that the problem might better be handled in the class-room where the teacher's questions may guide the child's thought.

The memorizing of selections of prose and of verse in which the class has become interested is another exercise that may well be delegated to the home-study period, as also may original illustrative work, such as a child's individual impression of a scene described in his literature or history lesson.

Of course the work which prepares directly for a school recitation has its place in any general scheme of home study and while it may lack some desirable elements of training it has sufficient value to claim its share of attention. History especially lends itself to this kind of treatment. Such a topic as the First Crusade might readily be assigned to a class with little introduction. The text-book account of the dramatic event, with a few definite questions to help them test their reading, is all that is necessary to prepare the children for a class discussion of the subject.

Of whatever nature the home study may be, whether it prepares for or supplements the school work, a few general principles control its assignment. In the first place it is made as definite as possible, not only as to the character and scope of the work required, but usually as to the sources of information as well. A direction such as—"Be prepared to-morrow to tell all you can about the voyages of Columbus," is apt to result in unsystematic, desultory work. If, on the contrary, the children are asked to trace the explorer's routes on an outline map and to explain why Columbus himself considered his undertaking a failure while we to-day look upon it as a memorable success, they know exactly what is expected of them and they have a standard by which to test the completeness of their task. Occasionally, in order to train the children to find material for themselves, the teacher omits to specify exactly where they

shall go for their information, merely suggesting that encyclopedias, histories, or perhaps some of their story books may furnish them with the material they need.

We also make it a point to have the children leave school with the feeling that they know exactly how to do whatever is assigned them. The child who goes to his work with vague ideas as to how it is to be done is apt to be discouraged and inclined to apply for a kind of help that the home should not be called upon to give. Such study defeats its own ends, robs the child of the satisfaction in his work which is his due, and detracts from the spirit of independence which it is designed to foster.

Another one of our theories is that children get a better kind of training if, during the home study-period, they concentrate on a few subjects rather than dissipate their energies by attempting a greater variety. If a child has a composition to write, or if he is looking through an author's work to select passages to read or retell to his classmates, he will do work more satisfactory to himself and to his teacher if he feels that he has plenty of time to do justice to his theme. In fact the value of home study is not so much a question of the quantity of work to be accomplished as of the kind of work that the new ideals of education call for, and this kind includes investigation and original application of principles—work that demands leisure for reflection, that requires time which the school session can not afford. It is this that we try to encourage, a certain degree of intensiveness, the spirit of study rather than the feeling that there is a multiplicity of tasks to be gotten through with as expeditiously as possible.

As a result we assign for home study one or two, or perhaps in the upper grades three topics, depending upon the nature of the work, and if by this limitation a history lesson, or a geography or spelling lesson is crowded out, the teacher feels that time is not being wasted though she and the children spend the following recitation period in studying the lesson together.

It has become an axiom in the educational world that what the pupils do for themselves not what the teacher does, educates them, and as study is essentially what the pupils do for themselves and what no one else can do for them, it is obvious that ability to study is a controlling factor in education. A know-

ledge of how to study is no more instinctive than is a knowledge of how to play a musical instrument. In both cases proficiency is a matter of slow growth and of much practice. But just as the student of music is saved time and trouble by a suggestion here and there as to how a difficulty may be avoided or an essential point mastered, so may the child who is learning to study be assisted by a few guiding principles. Study to most children means memorizing first and foremost—the memorizing of words or of ideas. While memorizing is an important element in study, the child should be brought to realize that it is not the only nor the most important element. He should be taught that to study truly he must not memorize indiscriminately but must judge of the relative values of knowledge, must learn to select important data from trifling details, and give to the former a far more careful attention than to the latter. He should learn, too, not simply to accept an author's statement of a truth but seek the cause of the truth and its effect, and so make the act of study an assimilation rather than a mere memorizing. He should learn to concentrate his mind upon his task, to work with a will until it is completed rather than to loiter over it until all interest has died out. And finally he should be trained to test the results of his own study, to ask himself essential questions, and pronounce judgment upon his own answers.

That all this can be brought to perfection in the elementary school is not claimed. As was stated above, the ability to study is a matter of growth, it belongs to maturity rather than to childhood. Nevertheless the child's footsteps may be set in the right path by giving him for study topics in which he is sufficiently interested to take the initiative, definite enough to leave him in no confusion as to what he is to do, important enough to impress him with their value, and few enough to encourage him really to focus his attention.

It is a difficult matter to explain how we teach the art of studying. It is an intangible process, practically every recitation of the day, through the emphasis of essentials, the attention to detail, the insistence on thoroughness, showing the child the importance of these features in acquiring knowledge and so indirectly aiding his study. More direct work is done during the regular study hours which are designed especially for the purpose of training the children to form good habits of work.

There are from two to four of these study hours on the weekly programs of the upper grades. The periods are conducted in various ways. Sometimes the teacher and her class study a lesson together, selecting important material and memorizing it if necessary, and in other cases in outlining a topic. Quite as frequently the children work independently at any task that is awaiting them, the teacher making individual suggestions as to better methods of study and encouraging application and thoroughness.

If the conditions at home are conducive to carrying on the work of study in the spirit which the school seeks to engender, the child should form habits of work which will always stand him in good stead, and should add to these a growing sense of responsibility, and an increasing spirit of independence and self-reliance.

M. F. K.

TIME SCHEDULE

Grade VI

Number of minutes per week devoted to various activities.

Literature	100
Language	140
Geography	90
History	90
Arithmetic	120
Physical Nature-Study	60
Manual Training	65
Art	70
Music	50
Physical Education	100
Recess	75
Opening Exercises	75

ALUMNI DEPARTMENT

Committee of the Alumni on Publication

Ernest N. Henderson, Ph.D., 1903, Chairman.
Adelphi College, Brooklyn.
Ellen Yale Stevens, Diploma, 1893.
Brooklyn Heights Seminary, 18 Pierrepont St., Brooklyn.
Emily Brinckerhoff Brown, Diploma, 1901.
Bretton Hall, Broadway and 86th St., New York City.
Ruth E. Dowling, B.S., 1903.
New York Training School for Teachers, New York City.

Gift of $1,000,000 Received by the College.—At the February meeting of the Board of Trustees a gift of $1,000,000 was received for the College.

In 1902 John D. Rockefeller offered to contribute $250,000 for general endowment whenever the College should be freed from an indebtedness amounting then to $230,000; and, furthermore, he offered during a period of two years from that date to duplicate, dollar for dollar, all contributions in cash for endowment up to $250,000. The indebtedness was removed in February, 1905, and at the recent meeting announcement was made of the completion of the second fund of $250,000. The donors of these funds are.

Frank R. Chambers	$15,000
D. Willis James	10,000
Jacob H. Schiff	10,000
Miss Matilda W. Bruce	7,000
Charles W. Harkness	5,000
Edward S. Harkness	5,000
Mrs. S. V. Harkness	5,000
Spencer Trask	5,000
George Foster Peabody	5,000
Mrs. A. Newbold Morris	5,000
Mrs. John Steward	5,000
Felix Warburg	5,000
Joseph Milbank	5,000
Mrs. Frederick Ferris Thompson	5,000
Archer M. Huntington	5,000
William A. Read	1,000
H. P. Wertheim	1,000
Mrs. George Jenkins	1,000
Total	$100,000

The remaining $380,000 was subscribed by V. Everit Macy, chairman of the board of trustees; Miss Grace H. Dodge, treasurer; James Speyer,

chairman of the finance committee, and their friends. The endowment of Teachers College now amounts to $1,073,048, of which

$193,800 was a legacy from Mrs. Caroline L. Macy for manual arts,
76,000 from Mrs. Peter B. Bryson,
2,000 from S. P. Avery for the library,
37,642 from Mrs. Kemp for the kindergarten,
13,606 for scholarships,
750,000 for general endowment.

The total assets of the college with this new gift now reach three and one-half millions. Of this, two-thirds is in equipment, $500,000 in grounds, the remainder in the cost and equipment of seven buildings. Of the first million of endowment, now completed, three-fourths is assigned for general purposes, one-fifth for the manual arts, and the remainder for library, kindergarden, and scholarships. The income from the new endowment and from tuition fees will leave only $25,000 of the current expense of $400,000 to be provided annually by the trustees and their friends, whose past gifts of this sort bring up the total expended in the work of the college to more than $5,000,000.

A New Building for the Study of Domestic Economy.—$450,000 of this recent gift to the college is for the equipment of the new School of Domestic Economy. A special building for this work has become a pressing need. The laboratories for biology, household chemistry, and cooking; the studios for household art and design and the workrooms for sewing have become more and more crowded, particularly as the number of graduates of other colleges in these courses has increased. New courses have already been provided in bacteriology, the chemistry of foods and nutrition, in dietetics, and in certain researches in foods directed by the Department of Agriculture at Washington. The new building will permit the development of this work, and the introduction of much desired courses in household economics under the direction of Professor Nutting, superintendent of the Training School for Nurses at the Johns Hopkins Hospital, who comes to the College next year. And it will make possible similar expansion of the work in household art, which has this year been developed by the inauguration of courses in interior decoration, the history of furnishing, and of costume.

The Teachers College Dinner at Chicago.—The one educational gathering of the year which draws Teachers College men from all parts of the country is the meeting of the department of superintendents of the National Educational Association in February. At the Chicago meeting thirty-six Teachers College men sat down to dinner at the Hotel Victoria on Tuesday evening, February 28th. Prof. E. C. Elliott of the University of Wisconsin presided. Dean Russell's address, in which he recounted the results which had been achieved by the College during the past ten years and prophesied the great things to be in the future, was most enthusiastically received. The representative character of the gathering is indicated by the fact that the list of speakers included men from California, Louisiana, Kentucky, Illinois, New York, Indiana, Minnesota, Ohio, Wisconsin, and

Missouri, one of whom was a college president, one a dean of a college for teachers, one a normal school president, one a superintendent of schools, one the head of a college department of education, and several professors of education and psychology in colleges and normal schools.

The Chicago dinner, however, was only one manifestation of the spirit of good fellowship which existed among these men. Some of the most important meetings were held around the posts in the lobby at the Auditorium, in quiet corners in the parlors, or around the smaller dinner tables. Wherever you found one Teachers College man you were sure to find others. They were there to discuss their problems with each other, to tell of their plans for the future, and to give help and inspiration to each other. The writer has just one word of advice to every Teachers College man—Do not miss the February meeting. It will be worth more to you than any other week of the year, and, of course, you will attend the dinner.

A partial list of those present is given below:

Benjamin R. Andrews	John Kelley
C. J. C. Bennett	David R. Major
F. G. B. Bonser	Guy E. Maxwell
J. D. Burks	V. G. Mays
W. P. Burris	J. L. Meriam
A. H. Chamberlain	Henry C. Pearson
Albert S. Cook	Virgil Prettyman
Walter F. Dearborn	James E. Russell
E. G. Dexter	H. L. Smith
E. L. Earle	David S. Snedden
F. E. Farrington	G. D. Strayer
Frank D. Graves	Henry Suzzallo
J. W. Hall	Edward L. Thorndike
L. A. Hatch	E. A. Turner
F. T. Hoyt	H. B. Wilson
Geo. A. Hubbell	John R. Wilson

Recent Academic Meetings at the College.—*History Teachers' Association.*—The Association of Teachers of History of the Middle States and Maryland, of which Professor Johnson is Secretary, met at Teachers College on March 8th and 9th. In connection with this meeting, the educational museum installed an exhibit of books, maps, charts, and illustrative material for the teaching of history. Among the books were standard histories and biographies, and American and European text-books,—France, Belgium, Holland, Sweden, Austria, and Italy being especially represented. The illustrative material included anthropological and ethnographical models, photographs, lantern slides, and a representative collection of German "visualizing illustrations."

Mathematics Teachers' Association.—The eighth meeting of the Association of Teachers of Mathematics in the Middle States and Maryland was held at Teachers College on Saturday, April 6. At the morning session, at eleven, papers were read on the "Teaching of Elementary Mathe-

matics, by Professor Hallett of the University of Pennsylvania, and on "Zero and Infinity," by Professor Maltbie of the Woman's College of Baltimore; at the afternoon session, at two o'clock, Mr. William E. Stark, of the Ethical Culture School, discussed "Mathematical Instruments in High School Teaching," and Professor Smith gave an illustrated lecture on the "History of Computation." Both sessions of the meeting were open to all interested in the subject.

The Public Education Association, Teachers' College, the *Ethical Culture School*, and the *Round Table* united in arranging a series of addresses on "The Function of the School in Developing Character," which were given on the evening of Thursday, April 4th, at the Ethical Culture School and on the evening of Friday, April 5th, at Teachers College. The program was as follows:

April 4th, at 8.15 P.M. Presiding officer: Superintendent W. H. Maxwell.

Addresses: "The New Ideals before the Young Men of the Country," President WILLIAM J. TUCKER, Dartmouth College. "Training to Efficient Citizenship," Prof. FELIX ADLER, Society of Ethical Culture and Columbia University.

Music by students of the Ethical Culture School.

April 5th, at 8.15 P.M. Presiding officer: Dean JAMES E. RUSSELL,

Addresses: "The Teacher's Opportunity in the Nation To-day," Rev. ENDICOTT PEABODY, Head-master of Groton School. "The Education of the Urban Boy," President JOHN FINLEY, College of the City of New York.

Music by Horace Mann Glee Club.

International Kindergarten Union. The fourteenth annual meeting of the International Kindergarten Union is to be held in New York City on April 30th and May 1st, 2nd, and 3rd. The greater number of these sessions meet in the buildings of the College and the Horace Mann School. Dean Russell is the president of the local committee and gives the address of welcome. Professor Dow will speak on "Principles and Methods in Art Teaching," and Miss Susan E. Blow and Mrs. Langzettel are other speakers connected with the College.

Secondary Education Club.—A club has been formed of students from all departments of the College who are interested in Secondary Education. This club held its first meeting—which was wholly social, to give the members an opportunity of becoming acquainted—in March, when between one hundred and one hundred and fifty members were present. Three meetings for the year are planned, the next to be sometime in April, when Principal Crosswell of the Brearley School will be present. Mr. C. H. Robison has been elected president of this club.

Summer Session of the University. The summer session of the University will open on Tuesday, July 9, 1907, and continue until Saturday, August 17th, inclusive. Many of the courses at this time are designed primarily for teachers in schools of all kinds or for other persons who seek advanced instruction and an opportunity for research.

This year courses will be offered in the following subjects. The numbers following certain subjects indicate the courses in those subjects given at Teachers College:

Chemistry	Greek
Classical Archæology	History
Domestic Science (4)	Kindergarten (4)
Drawing	Latin
Economics	Manual Training (6)
Education (14)	Mathematics
Educational Psychology (2)	Mechanics
Engineering { Civil / Mechanical	Music
	Nature Study (4)
English	Philosophy
Fine Arts	Physical Education (10)
Geography (2)	Physics
Geology	Physiology
German	Psychology

Romance Languages

All officers of instruction have daily consulation hours when students may meet them to talk over their work, and, in addition to the formal courses of instruction, special free lectures and concerts, excursions to points of interest in New York City, and informal receptions are arranged. All the resources of the University—the library, the gymnasium and field, Earl Hall (the students' building), the laboratories, and the Speyer School—are at the disposal of the students at this time, and the privileges accorded the University by the Metropolitan Museum of Art, the American Museum of Natural History and the Zoölogical and Botanical Gardens of the city are open to them.

It is calculated that the total expense involved in attendance at the summer session, exclusive of railroad fare, may be kept below one hundred dollars.

The excursions which have been arranged under the direction of Mr. Benjamin R. Andrews, Director of Extension Work, Speyer School, are as follows:

July 10—Lecture: "New York and the Visiting Teacher," followed by visit to dome of University Library. 4 P.M.

12—Lecture: "Columbia University—its Past and Present," followed by inspection of buildings. 4 P.M.

13—To West Point, and Washington's Headquarters at Newburg, by Albany Day Boat on the Hudson River, returning by evening steamer of Central-Hudson Line.

15—Trip circumnavigating Manhattan Island by yacht, through the Hudson, East, and Harlem Rivers.

19—Evening visit to Metropolitan Museum of Art.

20—To Tarrytown and Washington Irving region at Irvington, Tarrytown, and Sleepy Hollow, including Irving's house at "Sunnyside."

24—Afternoon visit to American Museum of Natural History.

27—"The Making of an American Citizen": Trip to United States Immigrant Station, Ellis Island; and to typical institutions illustrating educational, social settlement, and other helpful agencies on the East Side, New York.

31—Wednesday afternoon trip to New York Botanical Garden, and New York Zoölogical Park, Bronx Park.

Aug. 3—To New York Juvenile Asylum, Dobbs Ferry, N. Y.

7—Wednesday afternoon trip to Museum of Colonial and Revolutionary Relics in the Van Cortlandt Mansion, Van Cortlandt Park: with stop on return at Hall of Fame, New York University.

10—To Seabright, New Jersey, by steamer down New York Bay; visit to fishing village and United States Life Saving Station; opportunity to view the harbor and approaches to New York.

The more important excursions will be prefaced by explanatory lectures, which will be given by Mr. Andrews, at Havemeyer Hall.

The cost of these trips will be only the amount of the steamboat and railroad fare.

A Mathematical Exhibit of Interest to Teachers (*Science*, Feb. 8, 1907). For the benefit of students and teachers of mathematics who may be visiting Columbia University, the department of mathematics in Teachers College has arranged a permanent exhibit of material available for the study of history and teaching of the subject. One feature of the exhibit is a collection of mathematical apparatus and models adapted to the needs of the various grades from the kindergarten through the high school, including games, mensuration blocks, and models usable in geometry and trigonometry.

In addition to Professor Smith's library of several thousand books and pamphlets upon this subject, there is also available his collection of mathematical instruments—some dating as far back as 1450—of manuscripts, and of engravings and portrait medals of eminent mathematicians. . . . There are in Professor Smith's library about two thousand portraits of mathematicians. Of these it is possible to exhibit only a relatively small number. About forty are framed and can readily be examined, and visitors wishing to examine others in the collection are assisted in doing so. This part of the collection represents the work of a number of years and the repeated examination of the stocks of many European dealers. It is particularly rich in the works of early engravers, although containing a considerable number of photographs and modern process portraits. Reproductions of a number of the portraits have been made for school and college use by The Open Court Publishing Co., of Chicago.

The collection of Newtons includes all the most important portraits of this great mathematician and physicist. An effort has also been made to acquire all the best portraits of Leibnitz, Descartes, Euler, the Bernoullis, Legendre, Monge, Cauchy, and others who stand out as particularly prominent in the creation of pure mathematics. The collection also

includes the portraits of many who have achieved success in the field of applied mathematics, notably of men like Laplace, Lagrange, Huyghens, Bailly, and Arago.

Many of these portraits have been reproduced in stereopticon slides for the use of the department, and copies are supplied to schools at cost.

The collection of medals of mathematicians includes more than a hundred pieces and there is also the complete set of mathematical portrait medallions by David d'Angers. In addition to the portraits there are numerous other medals of interest in the history of mathematics, including the rare Metric System Piece of 1872.

Another interesting feature of the exhibit is the collection of autographs of mathematicians. On account of space, it is possible to exhibit only a few of the several thousand autographs in the library. The following are among the most interesting, and are shown in one of the wall cases: Newton—a two-page manuscript demonstration written for one of his students at Cambridge; Leibnitz—an autograph letter relating to a series of integrals; autograph letters of Sir William Rowan Hamilton, Euler, Johann Bernoulli, Mersenne (written about 1625), Maupertuis, Legendre, Wronski, and Arago; documents signed by Gauss, Laplace, and Lagrange; autograph letters from Poncelet to Liouville, Liouville to Dirichlet, and Arago to Poncelet. Autograph letters of the following mathematicians have been taken from the files so as to be accessible, and are usually displayed: in pure mathematics—Jacobi, Cayley, Sylvester, Kronecker, Cremona, Hachette, Poincaré, Hermite, Clebsch, Cauchy, Chasles, Clifford, Binet, Bezout, Monge; in astronomy—Bode, Airy, Delambre, the three Cassinis, Maskeleyne, Flamsteed, Flammarion; in physics—Ohm, Bessel; in the history of mathematics—Montcula, Fuss, Libri, Kästner, P. Tannery. M. Cantor. . . .

There are also displayed a number of books and curios illustrating certain steps in the history or the teaching of mathematics.

The equipment of this department has also recently been the subject of interesting commendation in the columns of *L'Enseignement Mathematique*, and *Bibliotheca Mathematica*. In the words of the former, "The organizers of this useful exhibit are to be most heartily congratulated, and particularly its founder and director, Professor David Eugene Smith."

Recent Appointments.—On the first of January, Mr. Herbert T. Coleman began his work at the University of Colorado as acting Professor of Education. He returns to the college in May to take his examinations for the doctor's degree. His thesis giving the history of the development of education in Ontario, Canada, is now being published as a number of the Teachers College Series of the Columbia University Contributions to Education.

Percival R. Cole, this year honorary fellow in the College, takes his examinations this spring for the doctor's degree, and next year returns to assist Dr. Macvannel in the Department of Elementary Education. Mr. Cole's thesis, now in press, on *Herbart and Frœbel: An Attempt at Synthesis* will also appear as a number of the "Contributions to Education."

Fellows for the Year 1907–08.—The Faculty of Teachers College has recommended and the University Council has confirmed the following appointments to Teachers College Fellowships for the academic year 1907–08:

Traveling Fellowship

Mary Davis Swartz.....Fond du Lac, Wisconsin
B.L., Dennison University, 1901; Diploma, Rochester Mechanics Institute, 1902; Teachers College, Assistant in Domestic Science, 1906.

Honorary Fellowship

Bailey Barton Burritt.....Le Roy, New York
A.B., University of Rochester, 1902; A.M.. Columbia University, 1903; Teachers College, graduate student, 1906–05.

Fellowships in Education

Gerhard Richard Lomer.....Montreal, Canada
A.B., McGill University, 1903; A.M., 1904; Teachers College, graduate scholar, 1904–06.

Clarence Hall Robison.....Piqua, Ohio
A.B., Northwestern University, 1895; A.M.. 1897; Teachers College, graduate student, 1906–07.

Cliff Winfield Stone.....Oshkosh, Wisconsin
B.S., Columbia University, 1904; Teachers College, graduate scholar, 1904–05; 1906–07.

Appointments in Secondary Education.

Anna C. Hedges, M.A., '05 after several years' efficient service at the head of the domestic science department in Pratt Institute, has been called to the principalship of the Hebrew Technical School for Girls, Second avenue and 15th street, New York City.

Romiett Stevens, a graduate student in the College at the present time, has been made assistant in the Department of Secondary Education and will continue in that position for 1907–08.

Joseph K. Van Denburg, '06, has been elected principal of Public School No. 40, Manhattan, New York.

Lloyd L. Friend, A.M., '06, is now carrying on important educational work in West Virginia. He is at present Chief Clerk of the Department of Free Schools at Charleston.

Mrs. Mary A. Walker, M.A. '05, has become the head of the well-known Cathedral School for Girls at Washington, D. C.

Appointments of Students in Music.

Herman Hoexter, B.S., '06, in charge of the department of music, Normal School, Galesburg, S. C.

Frances Dailey, '06, Supervisor of Music, Englewood, N. J.

Helen Latham, '05, in charge of the music in the Speyer School and the Horace Mann Elementary School, with two sight-singing courses in Teachers College.

Illustrations for Lectures on the History of Mathematics.—In response to requests for the use of stereopticon slides illustrating the history of

mathematics, the Educational Museum takes pleasure in announcing that it has made arrangements for supplying this material to schools and colleges. Since the demand thus far has been greatest for illustrations showing the development of arithmetic, the slides now ready relate chiefly to that subject. A list of these can be obtained by writing to the Museum. If, however, there should be a demand for slides illustrating the growth of algebra, geometry, trigonometry, analytic geometry, and the calculus, these can also be supplied.

Should a sufficient demand be expressed the Museum will consider the question of making similarly available the resources of other departments of the College

The slides will be furnished only to schools and colleges, or to those who give courses in such institutions. Since the price represents merely the cost to the Museum, no discount can be allowed, whatever the number purchased. The arrangement with the photographer requires that no order for less than twenty-five (25) slides shall be accepted. The price is $10 for twenty-five slides, and 40 cents each for any number in excess.

Since many of the slides are not kept on hand, there will be a delay of two or three weeks in filling any order. Orders should be addressed to

THE EDUCATIONAL MUSEUM,
Teachers College,
Columbia University, New York City

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No. 3 The Rise of Local School Supervision in Massachusetts. HENRY SUZZALLO, Ph.D. 154 pages. Price, cloth bound, $1.50, *net*.

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Reprinted from TEACHERS COLLEGE RECORD, September, 1905

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